The Builder.

No. CXXXIV.

SATURDAY, AUGUST 30, 1845.

NOTWITHSTANDING the search that is now made after old buildings, and the efforts used to induce their preservation, there are numerous interesting structures in the villages and hamlets of England falling to decay unknown and disregarded,—structures which are most valuable as records of the past, and evidences of the skill of our forefathers. Shrouded by a clump of trees, in some cases not a hundred yards from a high road, they remain unnoticed, even by the passers-by, although worth a pilgrimage,—and, full of the accumulated remembrances of past centuries impressed in the varying handwriting of different generations, are allowed to fall into ruin, or, worse still, are destroyed for the sake of the materials of which they are composed, and so disappear entirely.

It would hardly be thought that this could occur in a locality so close to the metropolis as Slough, the much-frequented station of a railroad. But so in a great degree it is: for we will venture to say that of the crowds of sight-seers who daily go from that place to Eton and to Windsor, not one in a *week* is aware that he passes within five minutes' walk of an interesting structure six or seven centuries old, if not more, dismantled and decaying; and perhaps there is not one in a *month* leaves the road and wends his way to visit it.

Yet there it is. Old Upton Church, so called to distinguish it from a modern monstrosity seen in the high road to Eton, is a genuine remnant of the Norman period, consisting of nave, chancel, and solid square tower, the latter standing between the two former. The chancel is peculiarly interesting, and should on no account be suffered to fall further into ruin. It is small and low; lighted by narrow, semi-circular-headed windows in the sides, and a plain three-light window, of small dimensions, in the east wall, this latter being an interpolation of later date. It is covered with groin-vaulting, and is paved, or rather *was* paved, with encaustic tiles. There is a pretty Norman doorway on the north side of the nave, and another entrance, through the tower, on the south side. The tower itself is covered with a mass of ivy of extraordinary magnitude, the main stem being no less than three feet wide and one foot two inches thick.

The interior presents a melancholy scene; all the fittings are removed with the exception of one rude desk with a prayer-book upon it: the stained-glass and brasses have been stolen, the plastering is tumbling, and the whole in ruin. Full service has not been performed in this church since 1837, but the burial prayers are sometimes read here, in the midst of the desolation, over the bodies of those who have desired to be buried in the quiet yard around it, where

"The rude forefathers of the hamlet sleep."

This line from Gray's "Elegy in a country churchyard" reminds us, that independently of the interest thrown around this structure by time, there are other circumstances which render a visit to it pleasing, and should aid in inducing its preservation. It was probably this very church that Gray had in his mind's eye when that elegy was written:—"the ivy-mantled tow'r," whence "the moping owl does to the moon complain." Gray was educated at Eton, and long bore it in memory. The elegy in question was not written there, but was commenced a few years after he had left, about the same time that he wrote the ode on a distant prospect of Eton College, beginning:—

"Ye distant spires, ye antique towers,
That crown the watery glade,
Where grateful science still adores
Her Henry's holy shade."*

Further, in this interesting old church rest the remains of our eminent countryman Sir William Herschell. In the tower, amongst ruin, is a modern slab of marble recording his name and merits, looking sadly out of place and suggesting to the mind the uncertainty of such memorials. "In perpetual memory," writes upon marble an affectionate son or sorrowing widow:—In a score of years the church may be a ruin, and the "lasting testimony" part of the paving of a churchwarden's pig-sty!

"So perish monuments of mortal birth,
So perish all in turn, save well-recorded worth."

Surely, however, Herschell's grave is not yet to be desecrated. Every tomb that can awaken some sentiment, excite to enterprise, or stimulate to good, should be religiously preserved as of national importance.†

As regards the church itself, it is seriously to be hoped that means will immediately be taken to preserve it yet for many years to come. Mr. Britton interested himself warmly to effect its restoration some time ago, and at this moment Mr. Jesse, well known to the reading public, is seeking to raise a subscription for that purpose. We trust he will not relax in his endeavours, and that he will be aided by all in the district who have influence.

* Gray was one of the first to apply himself to the revived study of pointed architecture, and from him Mr. Bentham derived much assistance in his celebrated "History of Ely." Horace Walpole was one of his most intimate associates at Eton, and they afterwards set out together for the tour of France and Italy, but quarrelled on the road through Gray's greater love of antiquities. Gray died 1771.

† We take this opportunity to refer to a letter on the present dilapidated state of Chaucer's tomb, in Westminster Abbey, which appeared in *The Times* a few days ago. The writer says that the name of the father of English poetry can only be deciphered by the assistance of a tracing in chalk over the letters. Thus few persons are aware when loitering through Poet's-corner, that they are treading over the ashes of one whose memory ought to be respected by all his countrymen; and foreigners visiting England must feel surprise in viewing the ruinous appearance of the grave of our oldest English poet. Were the tomb only repaired in some degree, and a slab of marble inserted in the wall, with the old inscription, which is extant, cut neatly upon it, this would be something, and might be done at but a trifling cost.

The tomb of Edmund Spenser was restored by private subscription in 1778. Shall we feel less alive than our forefathers seventy years ago, to the claims which these fathers of verse have upon our loving and respectful memory? The tomb of the great father of poetry was erected by N. Brigham, who, in the year 1556, "in the name of the Muses," placed the present inscription (now by the hand of all-devouring time rendered almost illegible). Let us then entertain a hope that very shortly, in these days of light and knowledge, some respect will be shewn to the mighty dead, and that the author of the "Canterbury Tales" will not be suffered to lie in a spot unmarked, and with scarcely his name discernible, except to some inquiring antiquary. Let us in this imitate the excellent feelings of our continental neighbours, who treasure up with the most sacred love the tombs and inscriptions relating to their poets and statesmen.

THE UNREWARDED EXHIBITORS IN WESTMINSTER HALL.

THE following letters have passed between the royal commission on the Fine Arts, and a certain number of the competitors at Westminster Hall.

Chester-street, July 17th, 1845.

SIR,—In concurrence with a general feeling among the competitors whose works are now exhibited in Westminster Hall, I have the honour to transmit to you the accompanying memorial to the royal commission on the Fine Arts, signed by a few of the competitors who happen to be in town. The necessity for its being submitted without delay prevents its being signed by several who are out of town, and who, I am informed, would hasten their return for the purpose of signing it if that were deemed necessary.

A consideration of delicacy alone prevents some of the rewarded candidates from affixing their names to the suggestion, which they cordially approve.

I am, Sir, Your obedient Servant,

F. Y. HURLSTONE.

To C. L. Eastlake, Esq., R.A.
Secretary to the Royal Commission of Fine Arts.

To the Right Honourable Her Majesty's Commissioners on the Fine Arts,—The memorial of the undersigned Artists, Competitors for the decoration of the New Houses of Parliament, and exhibitors in the present exhibition in Westminster Hall.

Sheweth,—That the improvement of public taste and the encouragement of those artists who are disposed to forego the more lucrative branches of art for the higher walks of historic and poetical composition, are essential objects of your royal commission.

That three experimental exhibitions have now taken place under the authority of your honourable board; an amount of talent far beyond expectation has afforded gratification to the public, and received the repeated approbation of your honourable commission. On the first occasion 137 artists responded to your invitation. In 1844, besides sculptors, sixty-one painters applied their exertions to cartoon-drawing and fresco painting, and received the sanction of your honourable commissioners, as worthy to be selected for public exhibition. In 1845, thirty-seven painters and twenty-nine sculptors are again before the public, with the approbation of your honourable commission.

That the advantage of these exhibitions to public taste and to the arts are indeed great, but unfortunately they have been attended with serious injury to most of the artists from the great expense (as well as loss of time and connection) that has resulted. The actual outlay of the painters for materials and models cannot be less than 8,000*l.* or 10,000*l.*; a loss sufficient to check their progress in future attempts, and in some instances perhaps to involve them in serious difficulties. Their desire to co-operate in this great national experiment, and to assist in furthering the noble course marked out by your honourable commission, will surely be listened to with that indulgence and respect that is seldom denied to men who have suffered in a good cause, and must be their excuse for thus troubling your honourable board with the following remarks.

That it appears that the receipts of the exhibitions of the first and second years were, repectively, 2,900*l.* and 1,400*l.*; and if we suppose 1,000*l.* to be received this year, the amount is 5,300*l.*, of which sum 1,000*l.* were given in 1843, in additional premiums, leaving 4,300*l.* unappropriated. If 500*l.* are deducted from the second, and 200*l.* from the third years' receipts for the sculptors, who according to the general opinion were not, like the painters, led out of their accustomed course, there will be the following sums to be divided by the number of unrewarded candidates in each year.

1843, 1,000*l.* among 116 unrewarded Candidates, give 16*l.* 10*s.* each.
1844, 900*l.* — 55 ditto ditto 16*l.* 8*s.* —
1845, 600*l.* — 20 ditto ditto 30*l.* 15*s.* —

Thus, to those who have tried but once, there would be a return of from 15*l.* 10*s.* to 30*l.* 15*s.*; those who have competed twice would receive from 31*l.* 18*s.* to 47*l.* 3*s.*, and the few who have struggled on through all the three years, would have 62*l.* 13*s.* out of a fund raised from their own previous sacrifices; not indeed half the amount of their actual outlay in models and materials, but each in proportion to his former exertions and sacrifices would be enabled to make another effort in this great national experiment, with fresh energy and increased experience.

Your memorialists humbly submit to the wisdom of your Honourable Commission the advantages of a self-supporting system of emulation, instead of that of premiums which renders each succeeding competition more unequal; and in the hope that the proceedings of your honourable commission will secure to

the arts of this country high honour and pre-eminence, your memorialists will ever pray.

R. W. Buss. F. Y. Hurlstone.
S. Bendixen. James Fogo.
Alex. Blaikley. Geo. Fogo.
Ford M. Brown. W. P. Salter.
W. Riviere.

July 25th, 1845.

"Whitehall, 31st July, 1845.

"Sir,—I beg leave to acknowledge the receipt of your letter, accompanying a memorial, dated the 25th instant, from numerous artists who are competitors for the decoration of the New Houses of Parliament, and who are exhibitors in Westminster Hall, recommending the division of the receipts of the exhibitions in Westminster Hall among the unrewarded candidates in each of such exhibitions.

I had the honour to submit the memorial in question to her Majesty's commissioners on the Fine Arts on the 29th instant, when the commissioners, referring to their decision respecting similar applications in 1843, directed me to reply that they do not think it expedient to adopt the course suggested by the memorialists.—I am, Sir, your obedient servant, C. L. Eastlake, Sec.

F. Y. Hurlstone, Esq."

"7, Fitzroy-square, 31st July, 1845.

"Sir,—Herewith I have the honour to send you the answer which her Majesty's commissioners on the Fine Arts have directed me to return to the memorialists referred to in your letter, received on the 29th instant.

In further explanation I venture to state, that in consequence of various applications, similar in their object to that of the memorialists, during the exhibition in Westminster Hall, in 1843, the question respecting a division of the receipts of the exhibition was frequently submitted by me to the consideration of the commissioners.

This subject was, from first to last, considered to admit of discussion only in one form, viz., the appropriation of the nett proceeds of the exhibition, after payment of the expenses.

The statement contained in the memorial, respecting the gross receipts of the exhibition, is incorrect. In 1843, instead of 2,900*l.*, the receipts were 2,472*l.* In 1844, instead of 1,400*l.*, the receipts of two exhibitions (in King street and Westminster Hall) were 1,259*l.* 5*s.* The receipts of the present exhibition up to the 28th instant are 638*l.* 8s. 6d.

The balance, after payment of the expenses incident to the exhibition in 1843, including 1,000*l.* in additional premiums, was 569*l.* 2s. 11d. In 1844, the expenses far exceeded the receipts of both exhibitions (the rent of the premises in King-street amounting alone to 850*l.*) That cost being defrayed by the Treasury, through the Office of Woods, the balance was 400*l.* 3s. 4d.

Before the exhibition took place, the cost of advertisements (with other expenses strictly relating to the exhibitions) was necessarily defrayed by the Treasury. Such expenses would, if enumerated, cause a further considerable reduction from the receipts. Again, the woodwork fittings in Westminster Hall, and in King-street, and the cost of the workmen employed on them, has not been defrayed from the receipts of the exhibitions.

This is the state of the case applicable to the view taken by the commissioners, and by the treasury, with regard to the proceeds of the exhibitions.

I have lately made application to the Treasury respecting the payment of the three premiums of 200*l.* each this year awarded. In the event of my receiving instructions to make such payment (600*l.*) from the fund arising from the present and the balance of the former exhibitions (amounting on the 38th instant) to 1,007*l.* 16s. 10d., the balance at the close of the exhibition will probably be insufficient to cover the expenses.

It will be apparent that the Lords of the Treasury may justly require such payment to be made from the funds referred to, in consequence of having defrayed the extraordinary expenses above mentioned during the last year.

In entering into this explanation, I have perhaps taken a course unusual for official agents. I have done so on my own responsibility, from a desire to put the memorialists in possession of the facts which, in the view of the commissioners, bear upon the question herein referred to.—I am, Sir, your obedient servant, C. L. Eastlake, Sec.

F. Y. Hurlstone, Esq."

The memorialists have since published the correspondence in the shape of a small pamphlet, and have added some remarks expressive of their disappointment, and their opinion that the expenses of the exhibitions should be defrayed by the nation.

"One small circumstance that concerns all the exhibitors must not be omitted. There is a principle, founded on equity, till now invariably maintained at our exhibitions, viz.: that every contributor shall have free admission, and be supplied with the catalogue that contains the account of his productions without charge. The royal commissioners alone have rejected this wholesome and just regulation: the charge of a shilling on the paying days, and of sixpence for the catalogue, has been exacted from the competitors; thus, regardless of their previous sacrifices and their rights, they have been made to contribute to the very last towards expenses over which they were allowed no control.* This has been the treatment of the artists; but that of members of both Houses of Parliament, of ministers and officers of state, of the high and puissant of this wealthy kingdom, has been more considerate; they were, to the number of 2,000, admitted gratuitously at the private view, and were presented with catalogues, for which they were not required to pay!

Is it love of money that induces artists to memorialise, or a desire for emulation and fame? Their past deeds must decide this question.† In the last century, when our artists first attempted exhibitions, the profits were given by them to public charities, and they received the grateful acknowledgments of the governors of the Foundling, the Middlesex, and other hospitals, for their generous liberality. In our own time, if parks are required for the health and recreation of the people; if literary and scientific institutions have to pay off a building debt, or to extend the means of their usefulness, an appeal to artists for disinterested assistance is never made in vain. At Manchester, Liverpool, Leeds, and other towns, the liberality of British artists is in this respect fully established. But how can they continue their voluntary exertions for the good of others, if a system is adopted that deprives them of all their means? If the example of the royal commission were followed, if its mode and measure of patronage and munificence were to be adopted by our corporate, parochial, and other authorities, what must be the fate of artists? In this model of encouragement at the conclusion of a great national experiment for the promotion of art and the introduction of the proudest style of historical painting, the outlay of a great nation is about one-half the actual expenses of artists who enthusiastically responded to the invitation of the royal commission."

Fresco Painting.—The Commissioners on the Fine Arts having received various applications from artists, candidates for employment as fresco painters, respecting the mode in which specimens of fresco painting may hereafter be submitted to them without reference to public exhibition, have issued a notice to the effect that such specimens may be sent to Westminster Hall from the 1st of March to the 1st of May next. The subjects and dimensions are left to the choice of artists, but those who have not previously exhibited are required to send specimens of drawing with their fresco paintings.

---

* If the royal commission had looked to parliament, as it should have done, for the expenses, the artists would have had no concern in them; but as the funds raised by the exhibition of their works are applied to the liquidation of those expenses, some control ought to have been allowed.

† The same love of art and desire for fame that impelled Barry and his contemporaries to offer to paint St. Paul's at their own expense would have induced the artists of the present day to nerve their energies and exhaust their means in the great experiment at Westminster Hall if no premiums had been offered by the royal commission. But however enduring their energies may be, their pecuniary means are limited; as they become exhausted, their zeal is rendered impotent, and the struggle for pre-eminence in historical composition hopeless. The principle recommended by the memorialists, of a *self-supporting* emulation, is surely the most economical, as it is the most effective mode of promoting genius.

ARCHITECTURE, A STUDY OF UNIVERSAL INTEREST.

There is no circumstance in the present period of architectural history so conducive to a future prosperous state of the art, as the increasing love of the study of it amongst those who are not practically engaged in the pursuit. The day may be far distant when the high and wealthy of the land will aspire, by a similar course, to attain to the eminence which the great Lord Burlington reached, not only by means of an arduous inquiry into the principles of the art, but by the labour of the craft; and it can hardly ever be deemed a wise proceeding to submit constructive details to the consideration of others than architects. But we deem that in the other department of the art no mistake has led to worse results, than that very common one, that architects must necessarily be the sole judges of architectural works. We hail, with pleasure, the increasing knowledge of ecclesiastical architecture, which has already done more towards the acquirement of correct principles in church building, than the years subsequent to the Reformation which preceded it. As already urged in this journal (vide *ante*, p. 385), a source of infinite pleasure is entirely lost, through the want of that knowledge which we recommend; one-half the page of history is blank to the tourist, who discovers nothing in the monuments of art, but their abstract forms. The collecting of stones and minerals, without a knowledge of the mighty revolutions in the earth's surface, and the component parts of the specimen, or the contemplation of the form of man, without the perception of the intellect, which animates and ennobles; these would be fit parallels for that state of ignorance to which non-professional persons have been for a long period ready to submit, and which professors have not desired to remove. Do the hundreds, that annually pass along the stream of the "exulting and abounding river" leave the scenery of their own islands unnoticed, because this is of inferior beauty, or rather for the sake of that interest, with which legends and the chroniclers of wars have invested the "chiefless castles" of the Rhine? But how much their interest would be enhanced could they feel that these "gay but leafy walls, where Ruin greenly dwells," contained "matter to be learned" more than cicerone and sight-seer think of, "sermons in stones," vocal of the customs and habits of centuries. The decorative character of an architectural work, the system adopted in points of detail, or the constructive arrangement, have more to tell, than the written chronicle, of the past. But it is not only the antiquarian part of the art, which might be studied with advantage; an earnest application to the theory, an elaborate study extending into all points of detail, could tend only to the improvement of architecture.

It would at least be some advantage if those who will probably always be the judges of architectural works, were acquainted with the mode of expression in plans and sections. Without this necessary knowledge, the member of a committee is quite unable even to know what is placed before him, and it is therefore the highest injustice that he should be allowed to sit in judgment. He is very much in the position of one who looks over a foreign author, without having opened a dictionary. But, much more than this is necessary; we wish that such an extent of information as the late Mr. Hope possessed, may become a thing of common occurrence rather than a solitary exception. Architects would then gain from those by whom entirely new ideas are most likely to be imparted, and architecture would no longer be "a thing of shreds and patches," but an art expressive of the state of national manners and acquirements. To praise any thing in such a building as Fonthill Abbey would now be deemed a proof of ignorance; yet the builder of that pile manifested that he was one of those who might have aided the art, though he was ignorant of the fashions in style. The architect has still more to do, though he may be well acquainted with the grammar of his art, and, however much the details of certain Gothic buildings, erected a short time since, are at variance with the original method, the whole conception is often grand and imposing. From their errors we may learn as much as from their successful features, and may discern the

way to a style in architecture, in which elegance and novelty of effect shall be co-existent with the most scrupulous attention to points of detail. In doing any thing to repress the study of architecture amongst non-professional persons, architects would be acting most blindly against their interest; hasty and incorrect judgments are the result of want of information, and a slight study of the art would lead to the conviction, that much greater study was needed ere the ability to give a correct opinion could be reached. Perhaps the want is not easily supplied, the information is scattered through a multitude of books, and is gained by the professor only by extreme difficulty and labour. But with the conviction that we have still to learn, and the earnest desire to do so, every difficulty is removed; the art becomes a source of delight, an index to the records of history, an intellectual accomplishment to men and women, alike. The field of the profession is expanded; it enters into the scheme, where building alone was thought of; it is alike called for in the palace and the manufactory. Let architects, therefore, aid in spreading the knowledge of their art, and themselves be prepared to learn, whilst so teaching, and the second half of the nineteenth century will be more remarkable for the prosperous state of architecture, and the estimation in which its professors will be held, than the first, for its thousand copies of old examples, and its ignorance of the pleasures and advantages which the pursuit is so amply able to afford. E. H.

THE VENTILATION OF BUILDINGS.

That many of our readers agree with us in considering this subject one of the greatest importance is proved by the number of letters relating to it that we receive. Efficient arrangements in this respect universally applied, in conjunction with others for draining, cleansing, and an ample supply of water, would effect an improvement in our social condition, and increase the sum of happiness enjoyed by the community, to an extent that cannot be fully estimated. Perhaps we should not be far wrong if we asserted that less than the enormous amount annually expended in England in the maintenance of hospitals and dispensaries, would be sufficient to effect this and render the great majority of these establishments unnecessary, *if we but knew the way*. Let us earnestly strive to find it.

The second volume of the second report published by the Health of Towns Commmission, contains twenty-one valuable plates illustrative of the principles of ventilation, accompanying a report from Dr. Reid on the state of Newcastle-upon-Tyne and other towns in the northern coal-mine district. From this report we take the following notes on the subject:—

"The state of ventilation in any apartment depends essentially on three conditions,—the quality of the external air; the quantity that can be made to flow throughout it at a given time, including its mode of distribution, and the regulation of which it is susceptible, whether we regard the temperature communicated to it or the force with which it impinges on the system; and its freedom from any noxious ingredient that may be developed by lamps, candles, fire-places, or any other special cause. Where sanatory measures sustain a pure external atmosphere by effective drainage, cleansing, and prevention of nuisances, one-half of the remedy may be said to be already secured, and without such measures no system of ventilation can be successful. Examples are not wanting where it may be a fair subject of discussion, whether it is not better to suffer a certain amount of deterioration of the atmosphere from within, when this does not proceed to extremities, than to permit a free and overflowing atmosphere from without where it is overloaded with emanations from drains or extreme accumulations of decomposing refuse known to produce disease. Such cases, however, are to be considered as rare exceptions,—a stagnant atmosphere without receiving in general only additional contamination from within, which renders it still more deleterious and oppressive by the impurities communicated to it in all inhabited apartments. It is thought right, however, to advert to the extreme importance of beginning, in all cases where it is practicable, with a pure atmosphere, as cases have occurred where disease has been propagated by ventilating apertures, selected without reference to the nature of the air which necessarily entered by them, particularly when taken from the surface of the ground, or from sites not regularly cleaned or subject to inspection.

In the northern district, as in other places, little or no ventilation is in general observed in any of the dwellings of the different classes of society beyond those usually accessible by the medium of doors, windows, and fire-places. In such examples of any attempt at systematic ventilation as came under observation, the leading defect was, that though an escape was provided for vitiated air, systematic arrangements were rarely adopted for securing the admission of fresh air.

The consequence of this was, that the discharge could not operate, except with such casual force as the irregular entrance of air permitted. It did not appear to be practically understood that, where there is no entrance there can be no exit, except through the conflicting process of a double current (an ascending and descending movement) through the aperture that ought to act as a discharge alone. Nor did the operation of the fire and fire-flue, in relation to ventilation, appear to have been more specifically investigated than in most other places. Again, where ventilation had attracted considerable attention (and in this mining district certainly many individuals were well aware of the important relation which it bears to health), the means of regulating the quantity, or diminishing the offensive impression produced by local currents, had not been brought into extensive operation. The constant complaints were—'we have too much air;' or, 'we have too little;' 'the draught is too strong;' or, 'we are oppressed with heat;' 'our feet are cold, but there is a sense of fulness and of headache.' These evidently indicate the necessity of controlling and regulating the ingress to a much greater extent than can be effected by doors or windows alone; of establishing a proper relation between the ingress and the egress, and of proportioning the ingress to the amount of supply, required both for any fire-place that may be in action and for such egress as may be provided.

It fortunately happens that the means requisite for these essential positions are much more simple for individual apartments (which are not densely crowded like public buildings) than for larger structures, for if an aperture for the admission of air of sufficient magnitude be always left open, then it will only be necessary to diminish the extent of opening left for the discharge by a superior aperture, or the opening in the fire-flue, according to the relative rapidity with which it may be required that the ordinary ventilation, or the heating power of the chimney shall act.

In the preceding observations no reference has been made to ventilation by forced currents, induced by any means, except those accessible in almost every apartment, as these are not considered absolutely essential for ordinary purposes, though very desirable when provision is made for them by arrangements incorporated with the original structure. I cannot omit to notice, however, that, where gas is introduced, or any brilliant illumination is employed, there the saturation of the air with moisture, and the extent to which it is vitiated by carbonic acid, demands in general a special provision, in order to secure satisfactory ventilation. Few cases presented themselves where gas is so largely used as in the metropolis, and none such as are so abundant there, more especially in shops and offices, in which the ordinary gas-lamps are lighted during the day (when required for heat and not for light), and the external air excluded as much as possible, that the vitiated air with all its warmth and oppressive deleterious products may be retained, no other source of heat being provided.

Were it more generally known, that the movement of an ascending current from lamps is always accompanied in non-ventilated apartments by a proportionate descent of vitiated air which may have previously supported combustion, and that this descent, though limited at first, may ultimately reach the floor, greater anxiety would be manifested in removing such products by a superior aperture. Nor should it be forgotten, that this ascending power which gas-lights, candles, and all other warm objects usually have, is in reality a ventilating power, which may, almost universally, with proper management, be made to correct the evil they otherwise induce, and even to assist or command general ventilation. Further, independent of the occasional presence of sulphureous and other offensive products from gas, the quantity of air consumed by excessive illumination produces an amount of carbonic acid and moisture far exceeding that commonly evolved by lamps and candles, and this necessarily demands a proportionate increase of ventilation. In some cases, gas-stoves may be observed, which in very small apartments not provided with fire-flues, often prove more manageable than any other stoves or fire-places, notwithstanding the expense of fuel; but these also, unless the products of combustion are removed by an iron or other tube as systematically as those that proceed from a common coal fire, are still more injurious than lamps, from the lower position in which they are usually placed.

Ventilation is universally observed to be most defective where great destitution prevails, as a low diet renders the system less capable of bearing that amount of air which would otherwise be agreeable. Protection from cold is the first and great desideratum which the constitution demands in any apartment, and the less the supply of the air, where the chemistry of the system is not in high condition and amply supplied with materials for producing internal warmth by those processes that elaborate the products of digestion and apply them in every part of the living system, the less is the extent to which its influence is felt. Hence, in the habitations of the poor, economy in the management and application of fuel, and diffusion to an extent, such as will render the air gentle in its impulse upon the person, become more and more important in proportion as the circumstances of the inmates are reduced. Similar remarks apply in all cases when the constitution has been enfeebled by disease, want of exercise, or a vitiated and too warm atmosphere, even among those whose means command every luxury that can be purchased for their gratification.

Again, the extreme difference in the demands of the same constitution at different periods (passing over the diversity of different temperaments) scarcely satisfied with one or two hundred times that amount of air when it is warm and loaded with moisture, which is abundantly sufficient when comparatively dry, and at a very low temperature, shews the necessity of providing in each individual apartment such openings as may admit at all times of a gentle and regulated movement, though cases constantly occur when, without a wide opened window, or a special ventilating power, an adequate supply of air cannot be obtained.

The application of any measures for forced ventilation in ordinary apartments beyond what can be commanded by their natural warmth, and the influence of the fire, or of the fire-flue in warming the wall, does not appear to have been made a particular object of attention. Were the kitchen fire-flue—or any separate flue immediately adjoining it—to be arranged so as to receive a communication from each individual apartment being made of a magnitude corresponding with their number, great facilities for ventilation could be introduced in all new structures for promoting those natural movements by which ventilation is most satisfactorily sustained.

The ventilation of workshops and manufactories claims as much attention and is fully as important to those who are engaged in them as the ventilation of their dwellings. In the latter they may spend from a third to a half of their life in a vitiated atmosphere, and at all events that period of repose which is often oppressive and unrefreshing from this cause. But in manufactories, more especially where the occupations are sedentary, where the vicissitudes of temperature are extreme, where siliceous, metallic, or other particles are received into the lungs, and induce disease by mechanical irritation, or when acid and corrosive or other deleterious emanations produce still more rapidly dangerous consequences, the subject of ventilation demands a more earnest attention, and is important to the manufacturer who is deprived by early death of skilled and valuable workmen, independent of the

severity with which such causes prey upon them and their families.

In all such cases the great point which the manufacturer should endeavour to attain, when practicable, is the direct removal of noxious emanations from the very source at which they are developed. General ventilation must be superadded to give complete relief, but if noxious emanations be once permitted to escape into the atmosphere of the apartment or workshop, the entire change of atmosphere is essential to restore freshness to the air: whereas if every noxious product be treated as much as possible on the same principle as smoke, by providing arrangements for the direct exclusion of the products of combustion, a much less amount of ventilation is sufficient, and at the same time the ventilation becomes much more effectual.

Excepting sedentary occupations, where no peculiar noxious product is to be guarded against, the extreme variety of circumstances peculiar to each occupation in which noxious ingredients are communicated to the air in confined apartments, renders any general plan of operations impracticable beyond what has been indicated, without introducing an amount of interference that might be too prejudicial to the interests of the manufacturer to be generally supported.

The amount of suffering, however, and of early death under many circumstances, is so great, that any systematic means of fixing public attention on this subject, to such an extent as would explain the cause of death in factories where it is excessive, and the economy of sanatory measures, would be attended with very beneficial results, equally apparent both to the proprietor and the workman. To the former alone can we look for the general introduction of sanatory measures in their respective establishments; but more intelligence among the workmen is essential to enable them to appreciate and take full advantage of such opportunities as they may have.

As to the improvement of ventilation in crowded workshops occupied by tailors, milliners, shoemakers, and all persons engaged in sedentary occupations, where few or no deleterious products are evolved beyond those that arise from respiration and combustion, the question would be more justly stated were it described as a question of warming as well as one of ventilation, as it is rarely observed that there is any objection to the discharge of vitiated air when that which enters is adapted to the state of the system. Undoubtedly, a regular egress for the escape of vitiated air is seldom provided; but this can never be placed on a right footing, however much it may relieve distress, till the ingress of air, and the warmth it may be necessary to communicate, shall have been satisfactorily adjusted.

In no case do the evil effects of the imperfect distribution of air manifest themselves in a more palpable manner than where rooms are crowded with individuals engaged in sedentary occupations. An under-current passing along the surface of the floor to the fire-place in winter may occasion, on the whole, a considerable change of air, but its local movement deprives it of almost all its value. The fire may receive pure air, but little or none moves upwards to supply the organs of respiration.

The evils from defective ventilation are then of great magnitude, and the continuity of their operation gives them a power and influence over the system which cannot be too minutely investigated. Few pause to consider the necessary consequence of twenty respirations per minute, 1,200 per hour, or 28,800 in a single day and night, where not only a noxious atmosphere is inhaled, and brought directly in contact with the blood, but where also the state of the air diminishes the amount of discharge of those noxious products which the system discharges more and more largely, in proportion to the purity of atmosphere inspired.

Bad ventilation, also, is as injurious to the mind as to the body; and in its more aggravated forms not only induces headache and apoplexy, but, conjoined with other circumstances, is prone to favour that depression which leads at times to low spirits, or even to suicide.

If the progress of air be examined in a room of ancient date, where neither the doors nor windows are air-tight, an ingress of fresh air is almost invariably observed below, and an equivalent discharge of vitiated air above; the fire-place being in this case supposed to be inoperative and closed by an air-tight board. Stagnation is thus prevented, and a continuous, though subdued ventilation, maintained through the apartment, to an extent dependent on the magnitude of the crevices in the doors and windows, and the condition of the internal and external atmosphere.

Again, if the fire be in action in the same apartment, the air in general enters by all crevices to supply the draught it creates, so that in this manner also the freshness of the air is maintained. Farther, the great altitude of the open fire-place in ancient chimney-breasts sustains a very powerful circulation at a higher level than is commanded by low cottage-grates in modern rooms, when the feet may be bathed continuously in cold air, while the head is placed comparatively in a warm stagnant atmosphere, unless crevices in doors and windows permit a considerable change.

It is a matter of much regret that in many houses the supply of air is so perfectly inadequate, both for individual rooms and for passages, that they act continually upon each other, the powerful fire in one room overcoming the weaker draught in the other, and communicating through the passage, which is accordingly more or less filled with smoke, that is—carbonic acid gas, mingled with various visible impurities, particularly charcoal, oily, or other substances.

Vitiated air from lamps and candles, as well as from respiration, tends to ascend, though, as projected from the nostrils and the mouth, it moves, at first, more or less downwards, or in a horizontal direction. In experiments made on this subject, the temperature of air from different individuals placed in a box lined with cotton and open above and below, was found to be generally four degrees higher above the head than below the feet (the box was suspended in the air), and, at natural temperatures, a current constantly ascended on every side from the person. Thus then it is obvious, that, if the natural movements of vitiated air in ordinary apartments be facilitated by one opening at the lower part, and another above, every room will ventilate itself sufficiently to prevent the more extreme effects that are so often observed at present.

If the lower opening be diffused by extending it along the skirting, the current becomes more mild and equal and less liable to strike upon the person, so as to produce an offensive draught.

If the upper aperture be led into a chimney flue, or into an independent flue warmed by its near position to a hot chimney, its action is more powerful and more uniform than a mere aperture in the wall near the ceiling, and not so subject to modification in windy weather. If it communicate with a powerful chimney-flue, it works still better, except when the fire declines, or the supply of fresh air is interrupted, a dangerous recoil taking place, and the upper aperture discharging smoke into the apartment: this defect may be obviated to a great extent, though not entirely, by the use of valves, unless they be regulated, and adapted from time to time according to the varying circumstances of the case.

Two apertures, then, at different levels are the great essentials in each apartment, and so ample a supply to all stairs and passages, that they shall not borrow or draw down air from individual rooms, but give freely to all that do not draw their supply from an external source. The most serious evils from offensive draughts and currents may be greatly diminished by proper diffusion of the air, as well as by the previous communication of warmth to it. Diseases from exposure to draughts appear principally to arise when the constitution has been heated excessively, in consequence of a defective supply of air; but, were a small aperture left continually open, the constitution could never attain that extreme susceptibility of cold, and aversion to the slightest breath of air which so often accompanies too limited a supply, and that reduction of the insensible cutaneous and pulmonary exhalations by an atmosphere loaded with moisture which leaves the surface of the lungs and skin unduly excited and turgid with a load of material that would have been dissipated by exhalation and evaporation with a better supply of air.

When a fire-place is in action, it necessarily complicates the ventilation. But all cases of this kind resolve themselves into the following classes:

The first comprehends those in which the fire-flue alone becomes the discharge of vitiated air. This cannot be considered the best, as, under ordinary circumstances, the fresh air travels along the floor, and little rises to the head, where it is most largely required.

In the second class, the evil effects of the vitiated air, which is prone to accumulate above the chimney breast, are diminished by its being raised to a higher level than is now common, or by admitting the external air from an aperture above, near the ceiling, so as to sweep across the apartment in its descent to the fire-place.

In the third and best class, the chimney flue is reduced to a minimum, and carries off solely the products of combustion; another superior aperture discharging the products of respiration and of lamps and candles, while a free ingress of air prevents all interference of the fire-flue and the ventilating flues. This adjustment is carried still farther in some places by the union of the fire and ventilating flues, and by the provision of a sufficient local supply for the fire in its immediate vicinity, which reduces greatly the general force of the current throughout the apartment.

The above principles involve the more important bearings of the question of ventilation, so far as it affects the individual apartments in tenements occupied by the poorer classes of society, it being taken for granted that the evils arising from defective drainage, closets, and cleaning, and a bad external atmosphere, have been removed. Practically then, a well-constructed window, capable of being opened above and below, realizes, when the fire-place is well arranged, all the essentials for effective ventilation in such apartments. Windows, however, are not recommended as affording the best means of insuring ordinary ventilation, though they may be resorted to with advantage when the weather is not severe, or under peculiar circumstances, and should therefore always be available when large supplies of air are required; but for that more minute ventilation which the system requires and tolerates in the severity of the winter's cold, and at a time when the dryness of the air promotes rapid evaporation both from the skin and lungs, a much less extended opening is required, and one capable of more minute and delicate adjustment to the ever-varying circumstances of the case, than a window can be made to command. The complaints arising from draughts and currents exist only when the movement of air becomes excessive, and is not suited to the temperament on which it impinges. The human frame is so constituted that a movement of air is perpetually sustained around it by natural causes during life. Very cold air having a very gentle movement around the person may not be offensive, while a much warmer atmosphere moving rapidly may be productive of extreme annoyance.

Taking these circumstances into consideration, with the fact that doors and windows appear generally, if not universally, to have formed no barrier against the most defective ventilation, great improvements may be anticipated when every apartment shall be provided with an independent ingress for fresh air, and an egress for vitiated air, which, though small, shall be incessantly operating, much more capable of regulation, and one which can never induce those violent and extreme changes which are produced by the occasional opening of doors or windows that may have been closed for too long a period.

In the great majority of cases where any attempt at systematic ventilation has been carried into effect in ordinary apartments, the objections which have followed its introduction appear to have arisen principally from two causes, viz., the excessive introduction of fresh cold air, or its local movement arising from cold surfaces or defective diffusion, which might have been obviated by leading in the air at any more remote part of the room, or in any position, so as to admit of the first impulse being broken by a diffusion board, or by extending the aperture of ingress along the skirting.

Another cause which appears to have re-

tarded considerably the introduction of ventilation in ordinary apartments, is the idea that some special force or power is required for this purpose. It is true, indeed, that a power is required; but nature has provided this power in the movements which the warmth of the person necessarily induces in the air which it vitiates; and hence, if the natural movements of vitiated air in ordinary apartments be not opposed and resisted by the absence of apertures at those levels where air, if left to itself, will enter or escape, the discharge of vitiated air upwards by ordinary currents is as fixed and certain as the descent of water by its natural gravity in draining operations; and, if a modification be induced in apartments by kindling a fire, still, if the chimney-flue be not excessive in size, and an adequate supply be given for it, as well as for superior ventilation, these natural movements will be sustained, and proceed in harmony with the functions of the system.

Apertures such as are now adverted to may not command the extended movements that give the most complete ventilation that machinery, furnaces, and other arrangements can sustain; they may be rendered more or less irregular by the action of the wind; but, without inducing severe draughts, they will remove the extreme evil that induces so large an amount of weakness, disease, and death, and it is this result that is necessarily most important to society.

It is also important to know that mere openings operate in another way than by facilitating ordinary currents, according to the relative pressure within and without in any apartment, though this second mode of action is to be regarded principally as an auxiliary force, in respect to its power of changing the atmosphere in any apartment, however important its functions may be, where the air comes in direct contact with the living frame. So careful has nature been in the securities taken to prevent any stagnation of air around the person, that, besides the movements dependent on an alteration of the specific gravity of each successive portion of air that is received into the lungs, or brought in contact with the surface of the body, a power of penetration, revealed in modern times more especially by the experiments of Dalton and Graham, is found to be incessantly in operation, promoting natural ventilation, and discharging vitiated air from every place in which it is prone to accumulate. This force operates in every direction with a power superior to that of the pressure of the atmosphere, and its tendency is slowly to diffuse all gases and vapours through each other, whatever may be their difference in specific gravity; its action is never arrested except where air-tight barriers are interposed between one portion of the atmosphere and another. Hence, then, where internal and external temperatures approximate so closely as to reduce the movements that commonly ensue between the atmosphere within and that without, and even where they may be reversed (as when a higher temperature prevails externally than is found within), still the power of penetration between the particles of different gases or vapours never ceases to reduce the intensity with which they may be prone to accumulate in any individual place, provided a communication be maintained between it and the external atmosphere.

HOLBORN AND FINSBURY COMMISSION.

Tenders for new sewers.—Copenhagen-street, White Conduit Fields: length, 1,040 feet; surveyor's estimate, 852*l.*

G. Smith (Bayswater)	£1,018 15
Hill	1,012 0
Johnson	996 0
Cooper	940 0

Gray's Inn-lane, &c.: length, 800 feet; estimate, 816*l.*

Cooper	£1,020 0
Eldred	975 0
Ward and Son	922 0
Hill	905 0
G. Smith	787 11

Red Lion-street, Clerkenwell: length, 480 feet; estimate, 440*l.*

Hill	£560 0
Cooper	554 0
Johnson	548 0
G. Smith	460 19

THE TOOLS AND IMPLEMENTS OF INDUSTRY AND ART.

A lecture on the above important and interesting subject was delivered on Thursday, 21st inst., at the City of Westminster Literary and Scientific Institution, Great Smith-street, by Mr. Wm. Higgs. The lecturer commenced by observing, that man was distinguished by the possession of the inventive faculty, by the proper exercise of which he is enabled to administer to the comfort and happiness of himself and all by whom he is surrounded. The mechanical powers, the means whereby muscular force is augmented and man is enabled to perform with ease many things, of which his unassisted strength would be quite incapable, were next glanced at, and an experiment or two given in illustration. Hunt's Patent Receiving Box was also alluded to as an ingenious and useful invention, illustrating the employment of the lever.

Having taken a brief view of the progress of the building art from the most primitive hut to the convenient dwelling and the elegant and stately mansion, the lecturer next commenced a detailed examination of some of the implements by which that art had been advanced to its present state. The spade first engaged attention; the properties of a good one were described, and the audience put on their guard against the spurious, but good-looking article formed by rolling, &c. The axe was then described, and its varieties exhibited, with notices of ancient instruments of this kind, of stone, and subsequently of an alloy of copper, as preceding the use of iron and the more improved steel-edged and steel-polled axe and adze of the present day; the Canadian, or Backwoodsman's axe, from its formidable appearance, excited much interest. After detailing the manufacture of these important tools, the hammer was noticed, and many of its varieties submitted to the inspection of the audience. The delicate hammer of the watch-maker, weighing together with its handle not more than 140 grains, was contrasted with the metal helve of our ironworks, weighing seven or eight tons, a diagram of which and of the tilt hammer made their mode of operation easily understood; the sledge of the smith, and the highly-wrought and beautifully polished planishing hammer of the silversmith were also examined. A form of mallet, differing from that in use by the carpenter, was also suggested, as having its weight so concentrated as to strike a heavier blow with less expenditure of labour.

The saw was described as an instrument of great importance, both as regards facility of operation and economy of material; its history and high antiquity were noticed, and its principal varieties submitted to inspection in a number of most beautiful and highly-finished specimens. The manufacture of saws was described as calculated to call into operation the skill and ingenuity of first-rate workmen. The properties of a good saw were thus described: "It should not be so thick as to be heavy or clumsy, nor so thin as to be easily crippled by fair use; the plate should be equally ground, not gouty or thick in the middle, for then it will require too much set, but if it gradually taper from the teeth to the back it will work with the smallest amount of set to the saving of wood and labour; it should not be too hard, but be capable of being filed, nor too soft, for then it will not retain its edge; upon examination, it should not discover any weak or crippled part, but all the particles should have an equal tension." A tool not much known but very useful was noticed, the flote, as intermediate to the saw and file. The antiquity and importance of the file also claimed attention. File-cutting was described, as also the subsequent process of hardening; many beautiful varieties were exhibited, some of the most exquisite workmanship, and some so exceedingly small as to bear a value of 2*l.* per ounce.

New Railway Break.—The Rev. F. H. Maberly, of Stowemarket, has lately obtained a patent for a break, by means of which he states, "every carriage of a whole train may be easily, safely, and almost instantaneously stopped," and further, that "if applied in all parts, it will be the means of preventing the carriages being thrown off the lines by oscillation or otherwise."

THE OLD CHURCH AT FULHAM.

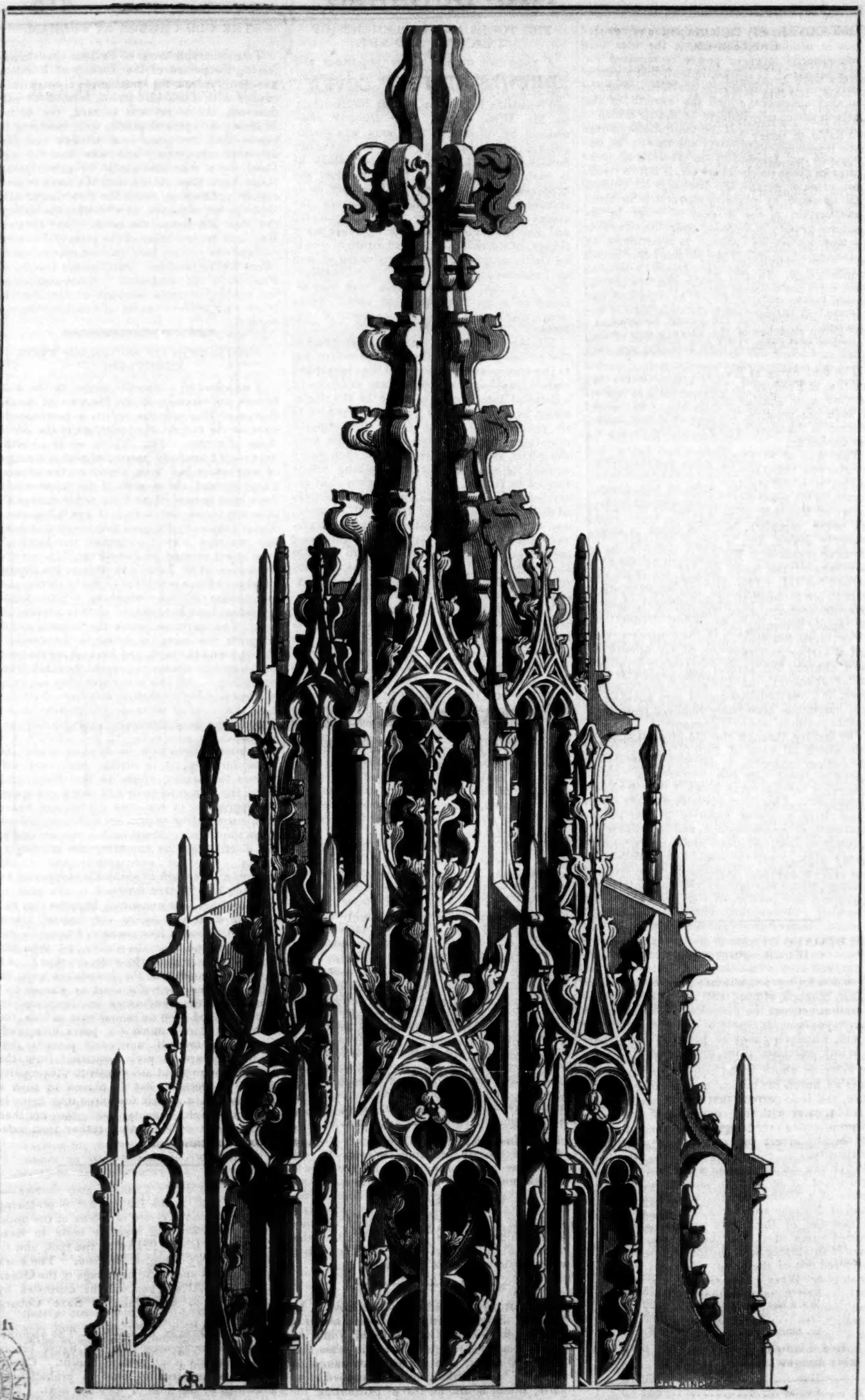
The venerable tower of Fulham church, adjoining the palace of the Bishop of London, has long called for restoration: brickwork capped with Yorkshire paving formed the battlements, the turret was stunted, the belfry windows, strings, and plinth, were tumbling to pieces, and the great west window had disappeared altogether, and was boarded up. Partly by a rate, and partly by subscription, funds have been raised, and the work is now rapidly proceeding, under the direction of Mr. Godwin, the architect. His lordship the bishop, the Rev. Mr. Baker, the rector, John Gunter, Esq., and several other of the principal inhabitants of the parish, have exerted themselves to effect this restoration. Mr. Samuel Cundy, of Pimlico, is the contractor. When completed we shall give some account of the church, which has several points of considerable interest.

PROTECTION OF BUILDINGS FROM LIGHTNING.

The effect of a thunder storm on the hot-houses and frames of the Marquis of Lansdowne, at Bowood, has led to a correspondence on the subject of conductors in the *Mark Lane Express*. Mr. White, of Walworth, says:—"I am fully persuaded that if a range of conductors had been placed on the nearest rising ground, the severity of the storm would have been drawn off, and the noble marquis's property preserved in part, if not altogether. But it frequently happens that many mansions are provided with "numerous conductors," like those erected by Pope Pius VII. for the protection of St. Peter's at Rome, the cupola of which edifice is *cracked in many places*, and ten arches of iron, weighing 60,000 kilogrammes, have been placed so as to prevent its fall. The lanterino above the cupola, which supports the cross, is found to be cracked through and through, and has been surrounded by heavy iron chains to prevent the crack from extending. All this heavy iron they say is to *prevent mischief by thunder storms!* Now the fact that conducting rods judiciously placed will protect buildings from injury, is fully established, as shown by Dr. Franklin; but if numerous conductors be erected about the same building, it is evident that they will attract the passing storm to that focus, and there the elemental strife will rage; and again, the application of ten iron arches, and heavy iron surrounding chains, are sufficient to draw from the thunder clouds such a vast amount of the electric fluid as to shiver the building to atoms. We not unfrequently see a tall chimney, or a stack of chimneys, supported by slanting bars of iron fastened to the roof of the building. It commonly happens that the electric fluid will follow the slanting irons, and, not finding a free passage, frequently damages the roofs or the walls; and then the wonder is, how came the walls cracked? An architect is consulted, the foundation must be defective, and the walls must be shored up; whereas if the conductors had been simple, and there had been no lateral bars of iron, the walls might have stood for years uninjured. Conducting rods, if judiciously placed—that is, if they are properly insulated from the building—are great safeguards to the property under protection; but if placed in such a manner that a lateral discharge may come in contact with the building itself, they are then instruments of destruction rather than safeguards or protectors.

Views in Saxe Coburg and Gotha.—Mr. Hogarth, of the Haymarket, is preparing for publication a series of views of the ducal palaces, castles, and hunting seats in Saxe Coburg and Gotha, drawn on the spot, and lithographed by Douglas Morison. The work is announced under the patronage of the Queen and Prince Albert, and will be dedicated by permission to the Duke of Saxe Coburg Gotha.

Royal Dublin Society.—The appointment of drawing-master in the figure school of this society is at present vacant. Candidates are required to send in probationary drawings by the 25th of October next. The election will take place in the following month.



Font Cover, St. Dunstan's Church, Canterbury.

EWSPAPER
BUILDER

FONT COVER, ST. DUNSTAN'S CHURCH, CANTERBURY.

It is very probable, that in ancient times covers were considered a necessary adjunct to fonts, and that there were few erected in England without them. The material of which they are mostly constructed being wood, and liable to decay and accident, but few of these interesting objects are now found. The subject of the plate is a very fine one, it still remains suspended over the font at St. Dunstan's church, Canterbury. It is a good specimen, first, of the rich architectural features these font covers must often have presented, and secondly, of the ease with which they were constructed, for though they appear to be elaborate when completed, they are in truth of simple design. In this cover there are only three pieces of separate pattern, these by being repeated eight times each, form the font cover. For the assistance of the young designer, I have given sketches of the three pieces with a portion of the plan, to shew how they are put together.

The font cover at Ewelme, in Oxfordshire, and that at Fosdyke, in Lincolnshire, are constructed upon similar principles. The effect of such composition, curious as it may seem to some, is the more beautiful, as the parts are less dissimilar.

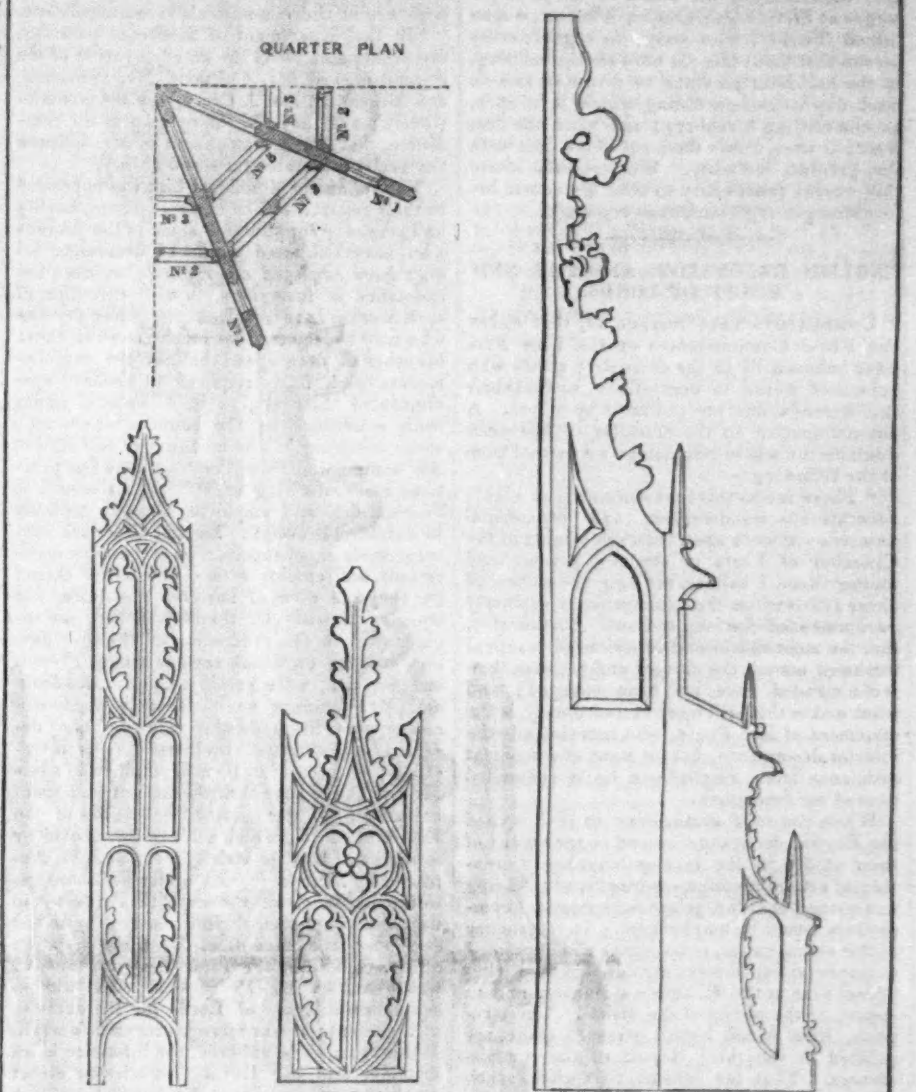
The font at St. Dunstan's is a plain stone octagon one, standing about 4 feet 10 inches in height, it is of similar date to the cover. Carter, in his great work on the ancient architecture of England, gives a print of the font and cover complete, but the latter is most strangely drawn, totally unlike the object it affects to represent. He places it among the specimens of the latter part of the reign of Edward the III. The style of the cover appears to me to be that of the middle of the sixteenth century, when Gothic architecture was rapidly becoming debased.

Few, very few font covers remain in England of earlier style than the one at St. Dunstan's church, but several can be found of similar character; at Littlebury church, in Essex, is a very curious one of very novel design, but it has been lately removed from its original position, and half destroyed.*

The facility, through the aid of machinery, with which all sorts of Gothic tracery and Elizabethan ornament, in wood or stone, can now be produced, will, before long, change the appearance of our architecture, giving the picturesque enrichments of the olden time both to our churches and domestic edifices; a font cover in oak, equally as rich as that of St. Dunstan's, can be made in London by Pratt's carving process for 15*l*. The young carver must exert his ability, and make the powers of his mind the rival of the forces of mechanical agency.

C. J. Richardson.

DETAILS OF FONT COVER TO ST. DUNSTAN'S CHURCH.



THE STAINED-GLASS FOR ST. JAMES'S CHURCH, PICCADILLY.

"To be designed in *keeping* with the interior, which is considered one of the finest specimens of Sir Christopher Wren's abilities."—Vide Mr. Mayhew's Circular to Artists, on July 16, 1844.

Sir,—As a constant subscriber to your valuable journal The Builder, your able and candid protest against the absurdity and manifest solecism about to be perpetrated in St. James's Church has naturally come under my notice, and is so correct, that it must, and will, no doubt, carry with it a conviction of justice and propriety to every rightly-informed mind, and thereby arrest the progress of such a monstrosity.

What can be inferred of a committee who could select for an Italian building an altar-window of a Gothic design, a positive compound of Norman and Early English, and in the face too of their very circular and the specified terms of it, viz. that it should "be designed in *keeping* with the *interior*, which is considered one of the finest specimens of Sir Christopher Wren's abilities?" I boldly assert the only conclusion that can be come to by any candid person is, that they have acted ignorantly and unjustly—ignorantly, seeing that a committee of their own paupers could not have committed so great a mistake, each of the other designs being in perfect accordance and in *keeping* with the interior; the one selected being the only exception—and unjustly, because by the terms and conditions they put forth they have misled and wasted the time and talent of artists, as well as wasted, by misapplication, the funds intrusted to them by the subscribers, by adopting an unfitting design, *not* "in keeping," &c. &c., from an artist who candidly confesses his incompetency to any other. What, Mr. Editor, would Sir Christopher Wren have said? that perhaps which Boileau has said—"nothing is beautiful which is false."

Mr. Willement and Messrs. Ward and Nixon wisely declined the *competition*, and, Sir, can it be wondered at, if, after such exhibitions of thoughtlessness in a number of eminent persons (who ought to know, and some of whom, no doubt, do know better)

That artists in future should decline
To throw their "pearls before the swine;"
Donors, too, devotionally bent,
May have a care their meed is not mis-spent.

I am, Sir, &c.,
William Warrington.

42, Berkeley-street, Hyde Park-square,
August 25, 1845.

In your article I believe you are not exactly correct in one point. The persons originally applied to (as I am informed) were Mr. Willement, Messrs. Ward and Nixon, Mr. Backler, and myself. Eventually the Duke of Cleveland and the Bishop of London wishing Mr. Wailes to be applied to, it was thought proper by the committee to open it to an extended competition. The Bishop of Armagh, the Bishop of London, and the Duke of Cleveland are, I perceive, the three principal subscribers with Mr. Byng.

FREE ADMISSION TO PUBLIC BUILDINGS.

On Saturday last a petition, signed by the mayor, magistrates, town council, clergy, and principal inhabitants of the city of Lincoln, to the number of 160, was forwarded to the Right Honourable Sir Robert Peel, Bart., the premier, praying him in the appointment of the new dean to the cathedral chapter of that city, to have regard to the free admission of the public to the cathedral at proper periods. At present a fee of one shilling is demanded to view the interior; this acts as a severe tax upon the citizens, who may have visitors, and who, in shewing "the lions" of the city, do not like to be charged with a payment of one shilling per head for walking through an edifice, profusely rich in sculptured decorations and magnificent in its lofty slender columns and groined vaultings of the nave, yet possessing few attractions of stained glass or monumental records. The recent decease of Dean Gordon, the discussions in Parliament, the correspondence with the Dean of Westminster, and the various articles in the public prints, about the example given by the Deans of Durham and Norwich, have all suggested to the citizens of Lincoln the propriety of making the present effort for a free admission to the interior of the cathedral. Of course it is not intended to exempt those who are curious enough to clamber up the rood-tower, to visit the great "Tom bell," from the payment of a proper fee to the guide. The same remarks apply equally to York and other cathedrals in the country, where a disgraceful system of fee-taking is too frequently carried on.

As regards Norwich Cathedral being open to the public, we are disposed to think any person applying to view it would find they

* An engraving of this font and cover has been in our hands for some time, and will shortly be given in The Builder.—Ed.

ould see very little of the building without payment, and that only during a certain number of minutes each day. While on this subject, we would allude to the insolent and discreditable behaviour, in his office, of the principal verger at St. George's Chapel, Windsor, a man named Tucker, who seems to regard every person that looks into the nave of that building, in the half-hour previous to divine service on week-day mornings, during which it is open, as committing a robbery; and when the first lesson is over, drives them out of the door with the greatest incivility. We seriously advise this worthy functionary to alter his course before stronger representations are made.

ENGLISH DECORATORS AND THE NEW HOUSE OF LORDS.

Complaints have reached us, that either the Royal Commissioners on the Fine Arts have behaved ill to the decorative artists who submitted works in competition, or that their recommendations are put aside by others. A communication in the *Spectator* of last week contains the whole complaint: we extract from it the following:—

"There are at this time some sixty or eighty decorators — wood-carvers and ornamental painters—at work upon the enrichments of the Chamber of Peers in the new palace; and among them, I believe, are only one or two of those artists whom the commissioners expressly recommended for employment. Certain it is, that the most skilful and experienced practical workmen among the carvers and painters thus recommended have not been engaged; and what makes this still more extraordinary, is the statement of Mr. Pugin, who superintends the interior decorations, that for want of competent assistance from Englishmen he is compelled to send for foreigners.

When the royal commission in 1843 invited the English decorators to send in specimens of their ability in the various branches of ornamental art, no premiums were offered; it being understood that the prizes for successful competitors would be employment. In pursuance of this arrangement, a committee was appointed to inspect the specimens exhibited in the spring of last year at the St. James's Bazaar, and to report on the merits of the artists. These reports, from which I shall presently quote, are printed in the third Report of the commissioners. That the ornamentists whose specimens were approved have been officially recommended to be employed *in preference* to others, I know for certain; having seen letters signed by the secretary to the commission, Mr. Eastlake, and sent for the information of the parties. I can also state of my own personal knowledge, that the artists in question have applied to Mr. Barry for employment, and are both willing and able to enter upon the work, but have been put off with smooth words and promises. Not being aware of any but wood-carvers and ornamental painters being employed at present, I confined my inquiries to these two branches of decoration. Six carvers, namely, Messrs. Cummings, Ollett, Ringham, Freeman, Browne, and J. Thomas, were favourably noticed in the Report of the committee; and another, Mr. Rogers, is especially mentioned in these terms: 'It is the opinion of the committee, that among the carvers whose works have been exhibited he holds the first place; and they consider him as the person best qualified to be entrusted with those parts of the woodwork of the House of Lords in which great richness of effect and delicacy of execution are required.' Nothing can be stronger or more explicit than this. And that the commission adopt the recommendation of the committee is proved by a letter from the secretary, directing Mr. Rogers to communicate with Mr. Barry. Mr. Barry says there is nothing for him to do at present; and bows out the applicant with this flattering excuse,—'There is nothing worthy the exercise of your talent, Mr. Rogers, in the House of Lords!' So that the doors, for which designs were especially required, the stalled and canopied seats of the peers, and the throne, are all to be left to common workmen. The soffits of the ribs of the ceiling, though they are of pierced carving, gilt and relieved upon a coloured ground, cannot be considered very important, since they are cut out of Canadian pine, the commonest and most fragile wood that could be chosen, and a favourite haunt of insect vermin. Of the other six carvers I have only heard of one being employed, and he only as a journeyman; and two individuals might be named who have suffered serious loss and disappointment by leaving their business in the country, in consequence of the committee's recommendation.

'In the department of arabesque painting, the artists noticed in the detailed report of the committee are Mr. Collman, Mr. Goodison, and Messrs. F. and J. Crace,' say the commissioners; and they add the opinion of the committee, that the specimens sent by Mr. Johnson 'evince considerable taste and ability.'

The following significant hint was appended to their report:—'The commissioners, having had reason to suppose that some of the persons who have exhibited works of decorative art *may have employed other hands*, or even the assistance of foreigners, in the execution of such works, have resolved that those persons who may be selected for employment in those branches of decoration shall, if the commissioners think fit, be required to produce specimens of their art, to be completed under such conditions as the commissioners may think necessary.' The meaning of this is, that the commissioners will employ none but practical men—working artists. Mr. Collman is an architect, and employed German painters to execute his design. Messrs. Crace are very respectable shopkeepers, who undertake decorations and employ artists to execute them; but they are men of business and taste, not working artists. Of themselves they are incompetent to the production of the specimen they sent in; on which various artists, French and English, were employed. Mr. Goodison and Mr. Johnson were the only successful competitors in arabesque painting who designed and executed their specimens themselves; yet neither of them is employed; while Messrs. Crace have both the honour and profit accruing from the painted decorations of the House of Lords, which are being executed by foreign and English artists, from designs furnished by Mr. Pugin, and under his direction, to the exclusion of the only two artists who were qualified for employment according to the decision of the committee. To the application of Mr. Goodison, the same flattering answer was given by Mr. Barry—that there was no scope in the House of Lords for the exercise of his talent; it was mere journeyman's work. If this injustice be suffered, the inference is inevitable, that the Royal Commission either wants the will or has not the power to enforce its recommendations. In either case, the artists whose labour has been taxed, and whose hopes have been disappointed, will have good ground of complaint of a breach of faith. The country also will have reason to be dissatisfied that the best native talent has not been engaged on a national work, that is intended to exemplify the highest state of perfection to which British art can attain in this age. The pecuniary loss to several ornamentists, through their being thrown out of employment by competing against their masters, or their giving up private business in the country to come to London, has been almost ruinous.

But, taking a wider view of the matter, there is great cause for regret that such a grand opportunity as this for calling out any original talent in ornamental design that exits in the country should be suffered to escape, by excluding from employment all but merely mechanical copyists of Gothic patterns."

Rare Building Ground. — The beautiful domain known as the White Knights Estate, near Reading, to which we referred a short time ago, is now fairly in the market as building ground. A company is in course of formation to make the roads and drains, build the lodges, and grant leases of plots for building on, and will not fail by a spirited and judicious outlay to secure a large return. The American and Chantilly Gardens, the wilderness and lake are to be reserved for the enjoyment of the inhabitants. It is impossible for the most graphic pen to describe the exquisite grouping of the splendid timber, shrubberies, and the slopes of sward, forming as a whole, perhaps the happiest effort of landscape gardening this or any other country in Europe can produce. We know of no such sites for houses at the same distance from the metropolis, and have little doubt that the shares will be eagerly sought after.

STIR IN THE SCHOOL OF DESIGN.

Sir,—As an article has appeared in your paper of the 16th instant on "the course of study in the school of design," the writer of which appears to have settled the matter very much to his *own* satisfaction, will you permit me to prove that he is either ignorant of the course pursued by the students, *or* that he has endeavoured to produce wilfully erroneous impressions of the grounds of their complaints. After mentioning the opinion of Mr. Pugin, and a previous correspondent in your paper, he goes on to say, "and those most modest remonstrators, the students, consider it utterly useless, as the directors do not adopt that course of study which they, in their wisdom, think fit to prescribe." Immediately following this comes, "But among them all, for my part, I have read no attempt to disclose a practicable remedy." How those two assertions can be both true I do not see, unless the students have offered a practical remedy which Mr. Morgan has not taken the trouble to read. But the first assertion is utterly false, and without the slightest foundation: the students never have attempted to prescribe any course of study, or even to offer any suggestions to the council or the authorities of the school. The facts are simply these:—The council lay down for the students a certain course of study, and they offer to them a certain amount of instruction; they appoint a director and clearly define his duties. Now what are the complaints of the students? They complain that the course of study prescribed by the *council* has never been followed out; that the instruction promised by the *council* has never been given; and, that the duties of the director as defined by the *council* have never been fulfilled. These are questions of facts, not matters of opinion. We have never discussed the merits of the system laid down by the council; we have never attempted to dictate or criticize their plan: we have laid before them depositions which prove (beyond all contradiction) that the instruction promised has never been given, and the duties of the director never fulfilled. If any further proof were wanting, hear the director's own admissions. In a special report of his, delivered to the council on the 4th of February (exactly a month previous to our petition being sent in), he says:—"As the subject of lecturing is of much importance, I wish to state briefly what has been the amount of my efforts to comply with this duty." . . . . . "I have delivered a *very few* written addresses," . . . . . "and from time to time, when a new example or set of examples was purchased, I have prepared myself and delivered a little lecture upon them." And very *little* ones they must have been; and in some very snug corner they must have been delivered; they most certainly were never given to the students, nor did they ever benefit them. One solitary effort was made to get up a lecture upon architecture, but painful to relate, it was found to draw too heavily upon the talents of the director, and it was abandoned. Immediately following the sentences quoted above, he says (speaking of his *little* lectures), "This cannot be deemed any sufficient substitute for the course stipulated for by the council."

At the same meeting of the council at which this report was read "Mr. Wilson was directed to obtain from Mr. Herbert a written statement of the most efficient mode in which he conceives the figure can be taught in the school with reference to ornament." In the report accordingly prepared by Mr. Herbert, he thought fit to suggest that a black board should be used by the director, practically to demonstrate to the students the various points of the lectures upon the history and principles of the various styles of ornament which it was his duty to give. Now, immediately on the sending in this report by Mr. Herbert, Mr. Wilson wrote to him, saying, that in consequence of the feeling which had incited him to suggest to the council the use of the black board, he should hold no further correspondence with him. Now what reason could there be to consider this suggestion as so severe a personal affront. I have attended lectures on various subjects connected with arts and sciences, and I have found it a common (almost a universal) practice for the various professors to draw upon a black board in the presence

of their audience, various diagrams illustrative of their subject. Is it possible then that the gentleman who undertook to furnish original designs for the various classes in the school, who agreed to teach the whole body of the students in the varied round of instruction promised in the school; and who took exclusively upon himself the task of teaching the *upper* class of the school, should feel himse f incompetent to the use of so common and generally received a vehicle of instruction as the black board? And yet upon what other grounds is it possible to account for such a message as that sent by the director to Mr. Herbert, or for the virulence with which he has pursued that gentleman, until at last he has procured the dismissal of one who had done, and was doing, more for the success of the school, and the benefit of the students, than any one else at any time connected with it. The truth is, the council had hoped to have veiled from the public their want of foresight, in appointing to the office of director a gentleman practically ignorant, and to have imposed the belief that the school was rapidly progressing to perfection under their management. The students have dared to rend the mask from before them. They have said to the public what the council had said to each other over their own tables long before; and we are punished accordingly. Not for uttering falsehoods, but for daring to speak the truth.

I trust, Sir, that you will excuse my intruding so long on your valuable time, and I remain, yours, &c., R. Burchett.

August 25th, 1845.

SUSPENSION BRIDGES.

Sir,—I do not think Mr. Hosking, in his "Treatise on Bridge Building," investigates the principle illustrated by the diagrams in your 128th number. I cannot contradict "B. B." on this point, but can say I have never seen it, and should like very much to have it pointed out to me. I did not make a choice of the works at Derby and Ashton, but inserted them in my letter because they were the first instances that occurred to me at the time, probably for the reason that they had lately happened, and were therefore fresh in my memory. I know nothing of the particulars in either case further than was given by the newspapers at the time; but, if my recollection serves me, the centres in both bridges were being struck, and therefore they were completed. Neither did I require these examples to fill up a vacuum in an argument which was of minor importance, and which I did not enter upon in my first letter until after stating I had replied to "all that concerns me;" for I could adduce a score of bridges that have fallen, and an immense number in a very dilapidated state, if it were not invidious to the engineers to mention them.

"B. B." mistakes my position if he supposes it to be suspension *versus* compression bridges. It is the *principle upon which both suspension and compression bridges are generally built* to which I object, and which I say is incorrect. To set it clearly before you, let it be allowed, that of two principles (which require for their investigation data differing from each other), when carried out in practice, and compared together, that which is superior in power, and admits of unlimited extension, may be termed correct, whilst that which is inferior in power, and continually approaching towards a maximum, incorrect. This being premised, here are a few experiments with suspension models, constructed on the catenary, and on my plan.

"In Bristol, Jan. 6, 1838, two models of equal materials and dimensions were tried. The parallel chain model bore 1·565 lbs.; the taper chain model bore 3·681 lbs. Again, in Bristol, Jan. 10, 1838, the parallel chains bore 1·456 lbs.; the taper chains bore 3·696 lbs. Another trial before the same party, the same day, was made with models constructed by Mr. Cross, of Bristol, unknown to Mr. Dredge, in order to prove that all was fair in the former trials; and the result was, the parallel chains bore 2·632 lbs., and the taper chains bore 6·849 lbs. Each model broke on adding more weight, and the chains throughout on the taper principle was reduced one size by the experiments."*

* Lord Western to Lord Melbourne.

These experiments are proved by practice and verified by mathematical investigation, which does not shew a maximum in extent of span. Hence, that principle which demonstrates the tapering chains may with propriety be termed correct; whilst that which compels the catenary, incorrect: and now to apply this reasoning to compression bridges. The only condition involved in our present inquiry depends upon the line of resistance which is traced from the resultants of the pressures applied to the arch of the bridge. Now, since these pressures are similar, and similarly applied both in suspension and compression bridges, their resultants are similar; and because it is the relative magnitude and position of these pressures which constitute the principle, we argue that since they are similar in each, the principle is the same in both. But the investigation turns on this point, that in the former the direction of the bars in the curve is determined by the direction of the resultants of pressures, whilst in the latter these resultants trace out some line within the boundary of the voussoirs, and the stability of the structure depends upon this line not intersecting the extrados or intrados of the arch. Now, if the fundamental principle is the same in both, and has been proved in one to be wrong, it follows it must be wrong in the other also.

By this time "B. B." will see that the failure of the suspension bridges which he brings forward are proofs in my favour, because they tend to shew that the principle upon which they are built is erroneous,—the very position I take. I have merely to remark in reference to the extract from Professor Hosking's work, that it is the opinion of an eminent man, to which I offer no objection, when the span is small, the command of capital large, provided the head room beneath the arch, or a hill over it be of no consequence; for in such cases any error of principle may be counteracted by immense masses of material, which the public have been used to see, and therefore think substantial, but because the error increases in a greater ratio than the span, when we come to extensive bridges there is this objection, viz. that the use of stone is impossible, in large spans it is very difficult of application, and in very extensive ones impracticable.

"B. B.," Still dwelling upon suspension bridges, after alluding to many circumstances which are supposed to alter the internal structure of iron, goes on to say: "in proof of which see the accounts of the numerous accidents that have occurred on the various lines of railway from the fracture of the axles of railway carriages," &c. This is no proof at all, Sir, for in the axle of a railway carriage the forces are applied at right-angles to the direction of the fibres, but in the bars of a suspension bridge in the direction of them, the mechanical action of the fibres of the two is very different, the mathematical principles distinct, and therefore the comparison is erroneous.

With regard to the Yarmouth bridge, the immediate cause of failure is easily accounted for by the fact that the section of iron in the chains was not sufficient to resist the effects of a loaded platform, for at the time of the accident there were several tons of tension in the chains more than the engineer should have allowed, and this, coupled with the inferior quality of the iron, accounts for the failure. It may be very true that twice the number had been upon the bridge, but then the weight was equally sustained by both chains; and besides, perhaps this weight might have permanently injured the iron by straining it beyond its limits of elasticity, so that when the lesser weight came on one chain it broke down. A question may be asked of me, would not your plan if similarly situated be attended with a similar result? Certainly not; for in the first place, if any part of the chain had an under strain upon it, the rest would be immediately active to resist it; and secondly, even supposing the chains to fracture similar to the Yarmouth, only one-eighth of the bridge would have sunk, and this not sufficient to have endangered life, because the remaining seven-eighths would have stood as firm as ever, and would have supported it.

I have again to remark that all the objections urged against suspension bridges generally are arguments in my favour. And in reference to the oscillation which "B. B." here speaks of, I beg to refer him to my letter published in your 128th number.

I am, Sir, &c.,

Bath, August 18th. James Dredge.

P.S. "M. Navier speaks of a chain stretched across between two rocks that command the town of Mourtiers, in the department de Basses Alpes. It is 656 feet long, and made of rods about 2 feet 1¼ inch long, and ¾ inch diameter, hooked one to the other without any intermediate links. The date of its erection is not certain, but it is supposed to belong to the thirteenth century. It does not, however, appear to have been ever intended for a bridge, but is thought by some to have been an offering to the Virgin to obtain protection against being overwhelmed by the rocks that overhang it. By others it is attributed to a knight of Rhodes, who is supposed to have erected it in consequence of a vow made during his captivity in the holy land. The iron is said not to be injured by rust."—*Drewry, page 9.*

*** We learn from the newspapers that a suspension bridge near Calcutta has just now fallen in. It was known as the Ballee Khall bridge, and was the largest of the kind ever constructed in India. It gave way in the middle just as it was completed, and fell into the creek over which it was erected. The accident is attributed to an error in judgment of the contractor, while making some necessary alterations, and does not in any degree effect the principle on which the bridge was built.

POWER OF CORONERS TO INQUIRE INTO THE CAUSE OF FIRES.

Quebec, New York, London, have been recently the scenes of fresh conflagrations,—lives have been lost and property destroyed to an enormous extent. The attention of Europe is awakened to the importance of an inquiry into the means of averting this dreadful catastrophe, and it is to be hoped that some steps with that end in view may speedily be taken.

Last week a jury of the inhabitants of the ward of Cripplegate-within were empanelled before Mr. W. Payne, the city coroner, at the School-House, Philip-lane, Aldermanbury, to inquire into the cause of the late fire on the premises of Messrs. Bradbury and Co. Manchester-warehousmen, of Aldermanbury.

The investigation, from its novelty, excited considerable interest, several of the common council of the ward, together with the civic authorities, being present.

The coroner, on taking his seat, said he would take the liberty of stating, as the present was rather a novel proceeding, why he had called them together. Latterly the number of fires in London had considerably increased, and when they took into consideration that nothing was so fearful as fire, they would be of opinion with him that when they had the power to inquire into the causes of such fires, nothing could be more important to the public at large than that the cause should be closely investigated. The ancient authorites shewed that in olden times it was the practice of the coroner to inquire into all burnings within his district, and that power still belonging to the coroner, although fallen into desuetude, he thought that they would be of opinion with him that it was most important that it should again be brought into force. In "Horne's *Mirror of Justice*" the duties of the coroner were clearly laid down, and among those duties the coroner was to inquire of all burnings, whether they were caused by felony or mischance. If they were of opinion that they had been set on fire with a felonious intent, then it was their duty to inquire and ascertain who the party was who was guilty of that felony. It was clear, therefore, in the olden time, that part of the coroner's duty was to inquire into all burnings; and he need not say how necessary it was to revive it at the present time. No one had the power to inquire into the causes of a fire—not even a magistrate, unless a party was in custody charged with causing it. The persons living in the neighbourhood of a fire were always most anxious to know how it occurred, and he thought the public would think that he had done no more than his duty in causing a jury to be summoned to inquire into the circumstances of the late fire, who also might, by any suggestion thrown out, prevent, in a great

measure, fires being so numerous. He had directed a number of persons to be summoned to give evidence as to the cause of the recent fire in Aldermanbury, so that they might come to a proper verdict, whether it was caused by accident or otherwise.

As every thing connected with this novel and most important proceeding must be of interest, the following is the form of oath administered to the jury:—"You shall well and truly inquire, on behalf of our Sovereign Lady the Queen, why a certain house and premises, in Aldermanbury, were lately burned, and a true verdict give according to the evidence; so help you God."

After a patient investigation the jury returned a verdict, "That the fire was caused by accident."

NOTES IN THE PROVINCES.

The inhabitants of Taunton are displaying no little spirit and judgment in carrying out their determination to improve their town, and thereby render it more attractive to strangers as well as more pleasant and healthy to themselves. A public meeting is about to be convened for the purpose of electing a committee of taste, and of devising means to carry into execution those improvements which may be considered desirable. Many excellent suggestions have already been made, among them we may mention the removal of the alms-houses in Magdalene-lane, and building in their stead a number of elegant and uniform cottages; the purchasing ground for public walks; the erection of a suitable building for public concerts, lectures, &c. A prospectus for the erection of public baths has also just been issued. It is proposed to raise a capital of 800*l.* in shares of 10*l.* each. 500*l.* to be appropriated to the building, and the remainder to furniture and incidentals. These and other improvements will not only raise Taunton in the scale of places of resort, especially during the winter months, but will confer a permanent benefit upon her denizens.——The new Corn Exchange at Colchester was opened on Saturday last. The event was celebrated by a public dinner, at which upwards of eighty gentlemen sat down, and George Round, Esq., the high-sheriff of Essex, presided. The building is situate close to the old Exchange, at the entrance of High-street. The façade is composed of a receding centre and wings, the entrances being under an Ionic colonnade, and the wings are connected by pilasters of the same order. The wings are ornamented in niches or panels with two bas-relief figures the size of life, emblematic of ancient and modern agriculture. A figure of Ceres, to cap the centre colonnade, is now in course of preparation. A flight of steps leads to the interior, which is an apartment 78 feet by 47, a row of light pillars on each side supports the centre part of the roof, the northern end is semi-circular, there is a row of sky-lights running all round, and a large lantern-light in the middle. The cost of the building, independent of the purchase of the ground, is about 2,400*l.*—— The committee for the restoration of the Norman Tower, Bury St. Edmunds, have once more issued an appeal to the public for means to enable them to rescue this fine specimen of Norman architecture from the destruction that threatens it. The total sum required is 2,794*l.* The subscriptions amount to 2,294*l.*, leaving still a deficiency of 500*l.*——A cemetery is about to be formed at Dudley, in Wolverhampton-street. The ground, comprising part of the fields and gardens between there and the castle bounds, in extent about ten acres, with a frontage of a hundred yards to the main street, is given by Lord Ward.——A new church is about to be erected in the Wicker, Sheffield, at the sole cost of the Misses Harrison, of Weston.—— Great improvement is in progress at the Market-street entrance to Trinity Church, Cambridge. A local paper states that very handsome iron gates have recently been put up there by Messrs. Shallow and Coleman.——Government has appropriated 25,000*l.* of the grant for the improvement of harbours to that of Harwich, and the works will be commenced almost immediately.—— Part of Cabourn Wold Pillar, situate one mile from Caistor, in Yorkshire, may now be seen above the trees. The stone-work is of such firm and neat execution, that great time is required even in gaining a few feet in height. Persons sailing on the Humber may now see part of the building, which, when finished, will be an ornament, and a use to most extensive views, both by sea and land, from the highest ground in Lincolnshire.—— The Cliff Bridge Company, Scarborough, have accepted the tender of Mr. John Barry, to erect a sea wall from the span to the bridge.——The trustees appointed under an act of Parliament for rebuilding Staines Church have advertised for the loan of 4,500*l.* upon security of the rates. ——At the last monthly meeting of the Literary and Philosophical Society of Newcastle, Dr. Glover, as secretary of a committee appointed to take steps for the immediate formation of a collegiate institution in this town, stated that the committee had memorialized Sir James Graham on the subject, and that although the answer of Sir James Graham was not favourable to the prayer of the memorial, yet it was not such as to preclude all hope of receiving assistance from Government.—— The Wesleyan Chapel, at Bramley, Yorkshire, has recently been considerably enlarged and improved, and an infant school erected at a cost of upwards of 1,000*l.* Mr. Simpson, of Leeds, was the architect.—— Holy Trinity Church, Hull, is undergoing a complete restoration, under the superintendence of Messrs. Binks. All the contractors are bound to complete their works before the 9th of October. ——A prospectus has been issued during the past week for the erection of a harbour of refuge in the Downs, between Deal and Sandwich, and close to the branch of the South-Eastern Railway. The proposed capital is 200,000*l.*——At Huntingdon, workmen have recently been employed in pulling down the Theatre, preparatory to a chapel being erected on the spot.

New Books.

Compositions from Shakspeare's Tempest. By J. Noel Paton. Chapman and Hall. 1845.

Mr. Paton has already made himself favourably known by a volume of outlines illustrative of Shelley's Prometheus (rewarded by the Art-Union of London with an honorary premium),* and a cartoon now exhibiting in Westminster Hall, for which he has been rewarded by the Commissioners of Fine Arts. The compositions before us will not fail to increase his reputation, some of them indeed display extraordinary genius, and lead us to anticipate that their author who is quite a young man, will take a high place in his profession. We would instance more particularly No. 5, "The foul witch, Sycorax," and No. 11, "Caliban musing," which are full of power. With much cordiality, we bid him go on, and prosper.

A Manual of Writing and Printing Characters, both ancient and modern. By B. P. Wilme, Civil Engineer. Weale, Holborn.

This is a very valuable work, and should be purchased by all young engineers, architects, and surveyors. The author asserts no more than the truth when he says, "The groundwork is laid for a system of analysis never before attempted, and which will be found to afford the greatest assistance as well to the teacher as to the learner, from its placing in their hands the correct principles for the practice of the art to be acquired.

"The analysis here referred to is that of the Roman alphabet—upper and lower case, and numerals. A careful examination of the system will enable the most inexperienced to extend the investigation of the subject to all the other alphabets."

This Manual commences with an investigation of the most generally useful letters, viz., those of the round hand, the first hand taught in schools, on account of its great utility in after life. Next in order follow the Roman upper and lower case letters and numerals, in full detail, exhibiting at one view both their analytical or integral parts, and their mechanical construction. Also, the Old English and German text alphabets as adapted to English use. The architect is furnished with nine plates of curious ancient alphabets, with the authorities for each.

Mulhauser says, in his analysis of his method of teaching writing:—"Writing is a species of drawing; and, as such, an imitative art. To imitate is natural and delightful to children; the power of imitation is therefore an important agent in education, and ought to be developed and directed. In writing, the child is required to produce an imitation of letters and words, *i. e.* of complex and combined forms, which are subject to a definite order and proportion. To enable the child to do this with ease, the instructor must render the process natural and therefore intelligible. He must dissolve the combination of letters which are called words; and he must resolve complex forms called letters into their simple elementary parts; in other words, the *instructor must* ANALYZE *the objects which the child is to imitate.* The next step is also to be taken by the master—he must arrange the elementary forms in the order of their simplicity, *i. e. the instructor must* CLASSIFY *the elementary forms, so that the first efforts of the child may be directed to the imitation of the simplest forms.* By this natural process, the child soon becomes familiar with, and enabled to imitate the separate parts of letters; he gains a rational conception of their elementary forms; easily combines them, and writes LETTERS and then WORDS. The child, therefore, proceeds by SYNTHESIS, *and constructs the object from the elements furnished by the analysis of the instructor.*"

The author gives ample directions for constucting titles for maps, railway plans, &c., with numerous examples. In writing a title, he observes:—

"1st. We should decide on the *size* of the title we would have.

2nd. The *number* of *lines* we would have.

3rd. The *style* of *characters* to be used.

4th. The model or trial title should be formed, which if it suit not our taste when done, can be altered or amended in writing the title itself.

5th. The spacing or distance between the lines should be determined on.

6th. Form the lines of writing (in pencil) by putting the centre letter of each line on the centre (perpendicular) line of the title, and working the other letters in the line from the centre to either extremity. Thus we find, by referring to the *model title*, that the first line contains seven letters, of which the fourth from the commencement will of course be the centre one, and will be placed on the centre line; N is placed in position, and we next (at the proper space which has been previously determined on) put down A, and at another similar space therefrom we put down L. It now only remains (for that side of the line) to put down P, which is placed at an equal space from L as A was from N. Proceed in a similar manner to work from the centre letter N to the right hand, and when the letters are all properly shaped out with black-lead pencil at equal distances, ink them over; when this is done, the construction lines may be rubbed out, and the title will be complete."

Mr. Wilme's book should be in every office.

* Published by Holloway, Bedford-street.

Liquid Air a Motive Power.—In our last number we referred to the rival systems, at present dividing public attention, for applying as a motive power, to railway propulsion and other purposes, air in a highly condensed, or in a highly rarified state. We have this week to record another step made in the same direction:—by means of enormous compression a person of the name of Evans, residing in Phidelphia, is said to have succeeded in liquifying atmospheric air, which resumes its original volume with an elastic force quite prodigious, on applying a few drops of some chemical composition. It is asserted that a train of twenty loaded waggons was transmitted a distance of sixty miles in less than an hour and a quarter, the whole motive power being the liquid air enclosed in a vessel of two gallons and a half measure, into which fell drop by drop and from minute to minute the chemical composition in question. We should mention that the source of this information is a private letter from Philadelphia published in the *Memorial de Rouen*, and seems to need the authentic confirmation of the American journals.

Correspondence.

HOLLOWAY CONGREGATIONAL CHAPEL.

SIR,—I may perhaps be allowed, in confirmation of the remarks of "Vigilans," to mention on good authority, that two of the designs sent in were considered preferable to that of Mr. Emmett, but that both were thrown aside ostensibly *in justice to the other parties*, because the estimates did not precisely tally with the sum stated in the advertisement. You will then perhaps be surprised to hear that this notorious committee have actually had the effrontery to accept an estimate (artfully omitted in the first instance), which proves to exceed that amount by *only* 700*l.*; viz. 3,200, instead of 2,500*l.*

This is indeed insulting, but as I suppose they are fully prepared to carry their *protegé* through thick and thin, it is hopeless to expect any redress, and nothing is left to the victimized but the dismal satisfaction of publicly making known such nefarious treatment, and defying the parties implicated to a clear explanation.

I am sorry to learn that at the head of the committee is the minister of the place, who from his station it might have been hoped would have been among the first to see justice dispensed to all, and check rather than (to say the least), connive at the unfair attempts of party influence.

I am, Sir, &c., E. B. L.

THE GLASS TRADE.

SIR,—The article upon the glass trade, quoted from the *Gardener's Chronicle* in your journal of the 16th instant, is a misrepresentation of facts, and we shall feel obliged by your giving the following observations publicity.

The quotation of second quality at gross prices from our list in comparison with foreign glass nett, is unfair, British glass of fourth quality being fully equal to the best sheet yet imported; and, if from our price be deducted the large discount we allow, the difference does not exceed one farthing per foot.

Again, when British glass for horticultural purposes or skylights is made above forty inches in length, our nett charge is only three farthings per foot extra, and not from one penny to three shillings, as erroneously set forth.

The price of foreign glass is for squares not exceeding forty united inches, thus, 20 by 20, 30 by 10, and not forty inches long, as stated, or as we sell British glass 40 by 30, in sheets from 4½d. to 5¼d. per foot, according to the substance required. We are, Sir, &c.,

CHATER AND HAYWARD.

SEWER IN HENRIETTA-STREET, BRUNSWICK-SQUARE.

SIR,—Having had occasion to pass frequently by the end of Henrietta-street, Brunswick-square, in which a new sewer is being built of the egg shape, the smaller end downwards, of about 2 feet 6 inches by 4 feet, inside measure, I have watched the men at their work, and was to-day much surprised at the mode in which it is being done. It is thus—a number of bricks are put together with cement (I believe in a mould), forming a block of about 18 inches long by 12 inches wide, and 4 inches thick; the blocks are then carried down into the excavation, and placed in it not only to form the bottom, but the sides also; the blocks are bedded solid on each other at the level joints, but at the cross joints they are put together dry, and then pointed up. The crown is made of two rings of brickwork, 4 inches thick in mortar.

Now, I think there are many great objections to this mode of proceeding. If 4-inch brickwork be enough for the bottom, that part being of a quick curve, it certainly is not enough for the sides, they being nearly flat, or very little curved, and must give way if any height of water get between the brickwork and the earth, for then we shall have an hydraulic pressure which will force in any brickwork only 4 inches thick, and of a flat curve; or if there be any pressure from any other cause, the sides will give way, and fall into the sewer. Moreover, the 4-inch brickwork is built in the worst manner; every brick should be laid by itself, bedded solid on the brick beneath it, and also against the next brick, breaking the joint at every course, and also laid solid against the earth; but by the mode here adopted, we only get the level course solid, and, instead of the upright joint being broken at every course, there is a straight upright joint to four successive courses, and that not made solid, but merely pointed up. It is all but impossible to lay a block of brickwork 12 inches by 18 inches solid against the earth; at any rate, in this case a stick may be passed between them almost everywhere. The outside 4-inch ring of the crown has no abutment but the earth, so that the pressure from without is likely to make it run behind the 4-inch springing walls, and throw them into the sewer. Again, why not make the crown of the sewer of 9-inch brickwork, well bonded by bricks or headers, instead of two 4-inch rings, connected by a course of mortar. I believe it is allowed by mechanics, that a 9-inch arch will bear four or five times the pressure that a 4-inch arch will.

It is only right to state that I, being a builder, frequently notice how the sewers are built, I never before (as I can remember) saw less than 9-inch brickwork, even to the bottom or invert, and that in cement and well-bonded together except to some sewers in Camden Town, where the bottoms are but 4-inch in cement.

I hope this is the first and last time of building a sewer in this manner, for I think it is very much like wasting the money it will cost, towards which, as a ratepayer, I shall be called upon to contribute.—I am, Sir, &c.,

6, Judd-street, THOS. ELDRIDGE,
August 26, 1845.

Miscellanea.

BELFAST.—Since the commencement of the present year upwards of 400 houses have been built in Belfast and its suburbs. At the present moment there is not in the town a machine-maker, iron-founder, boiler-maker, stone-cutter, stonemason, bricklayer, brickmaker, or carpenter, unemployed who is willing or able to work; and yet we are told that the union has annihilated our trade. In 1822 the Belfast carrying trade was disposed of by a single steamer of 50-horse power, plying once a week, and there was no steam communication with any port but Glasgow. Belfast now sends out 26 steamers.—*Northern Whig.*

THE LEICESTER MONUMENT.—The first stone of the monument to be erected at Holkham to the memory of the late Earl of Leicester, better known as Coke of Norfolk, was laid about a fortnight ago, by Lord Colborne, in the presenee of a large number of persons, the architect, Mr. W. J. Donthorne, of London, assisting. The monument, as most of our readers know, the design having been both exhibited and engraved, will be a well-proportioned column with agricultural emblems.

THE ASSOCIATION OF ARCHITECTURAL DRAUGHTSMEN.—The works of members of this association will be exhibited to the public at their rooms in Southampton-street, Strand, during the whole of next week. We are anxious to draw attention to this society as offering facility of communication between principals desiring assistance and those competent and willing to afford it, which must prove valuable.

GOVERNMENT COMPETITION IN OIL PAINTING.—A notice has been issued by command of the Fine Arts Commission, to the effect, that the competition in oil painting, which was to have taken place in June, 1846, is postponed till June, 1847.

SMOKY CHIMNEYS.—Mr. Hope's chimney-doctor's bill, for his new hotel in the Rue St. Dominique, exceeds 5,000*l.*, as we learn from an action just brought by the said chimney-doctor, M. Ducel.—*Paris Paper.*

Tenders.

For contracts at Southall, at Mr. George Robins's Estate, August 18th, 1845; Mr. Wm. Reynolds, Notting Hill, Surveyor.

	New Buildings.	Repairs.
J. Lockwood	£1,260 0	£242 0
Thos. Hiscock	1,256 0	
W. Mumford	1,250 0	250 0
Thos. Nias	1,240 0	191 0
Cooper and Davis	1,225 0	275 0
W. Hunt	1,047 0	115 0
Richd. Brewer	1,000 0	135 0
John Shoppee	987 0	207 0
Francis Sandon	975 10	165 5
E. Brighton	849 0	109 0

Tenders opened in the presence of all parties.

For the Superintendent's Residence and Reform Establishment for the Incorporation of the Philanthropic Society, St. George's-road, Southwark: Messrs. Graland and Christopher, architects.

Mr. D. Nicholson	£1,455
Mr. Hayson	1,396

Mr. Nicholson's tender was accepted, ruled by his schedule of prices.

For building seven Small Houses in Bethnal Green Road; Messrs. Brandon, Architects.

Mr. Spekins	£1,665
Mr. Paluck	1,600
Mr. Geary	1,597
Mr. Ward	1,558
Haines and Co.	1,485

NOTICES OF CONTRACTS.

[We are compelled by the interference of the Stamp Office to omit the names of the parties to whom tenders, &c., are to be addressed. For the convenience of our readers, however, they are entered in a book, and may be seen on application at the office of "The Builder," 2, York-street, Covent-garden.]

For the execution of Works on the Leeds and Thirsk Railway.

For the execution of several lengths of Earthwork on the Aberdeen Railway. There are 5 separate Contracts, varying in lengths from 3½ miles to 4¾ miles.

For the supply of 70,000 Larch, Oak, or Fir Sleepers, and Fencing for 50½ miles, or any part thereof, for the Ipswich and Bury St. Edmund's Railway Company.

For the erection of a Wesleyan Proprietary College at Taunton.

For the execution of the works on the Nottingham and Lincoln Railway, in two parts; 1 from Nottingham to Newark, being a distance of 17½ miles. 2 from Newark to Lincoln, being a distance of 15¾ miles.

For Lighting a portion of St. John's district, Notting-hill, with Gas.

For Paving and Relaying the Footways and Paving or Macadamizing and Relaying the Carriageway in Somers-town, St. Pancras, for the term of three years.

For supplying the Aberdeen Railway Company with Scotch Fir Sleepers.

For supplying the Dundee and Perth Railway Company with 50,000 Scotch Fir Sleepers.

For supplying the York and North Midland Railway Company with 2,000 Tons of Chairs.

For executing that portion of the Dundee and Perth Railway, commencing at Dundee and ending at Kingoodie, being about five miles 360 yards in length.

For supplying her Majesty's several Dockyards with Cast-iron Articles for twelve months certain.

For supplying 300 Sets of Wheels, Axles, and Guard Irons to the Great Southern and Western Railway (Ireland).

For making a Cylindrical Sewer in the town of Cambridge. The length will be about 48 yards, and the average depth about 12 feet.

For the execution of the whole works of the first ten miles of the Howick branch of the Edinburgh and Hawick Railway.

For Raising Mud in the Ship-basin of the Regent's Canal Company, for a term of three years.

For the execution of that portion of the Cumnock Branch of the Glasgow, Paisley, Kilmarnock, and Ayr Railway, situate between Loch Brown and Auchinleck, being about 7 miles in length.

For 500 Tons of Cast-Iron Socket Pipes with bends, branches, syphons, &c., for the Commercial Gas Light and Coke Company, Stepney.

For the construction of the Gas Works at Wells, Norfolk, and all necessary apparatus.

For the construction of Three Reservoirs for the Blackburn Waterworks Company: also, of Stone Culverts for conveying the water a distance of about 2¾ miles. The earthwork will amount to about 180,000 cubic yards.

For paving and repairing certain Carriage and Footways in the parishes of St. Margaret and St. John the Evangelist, Westminster.

For supplying the East-India Company with British Iron, &c.

For the erection of an Infirmary at the Lambeth Workhouse.

For the execution of works on the Manchester South Junction and Altringham Railway, in two parts: 1, being a distance of 1½ mile; 2, being a distance of 7¾ miles.

For the execution of Works on the Manchester and Birmingham Railway in 2 parts. 1. The Ashton Branch, being a distance of about 4¾ miles. 2. The Macclesfield branch, being a distance of about 30 chains, including a tunnel of 330 yards in length.

For the execution of that portion of the Edinburgh and Northern Railway, extending from Burntisland Pier to Kinghorn.

For supplying the Trent Valley Railway Company with about 200,000 sleepers of good sound Baltic timber.

For erecting sundry Workshops for Engine and Carriage Repairs at the Brighton Station of the London and Brighton Railway.

For supplying the Clydesdale Junction Railway Company with about 2,500 Tons of Rails, and about 600 Tons of Chairs.

For supplying the Leeds and Thirsk Railway Company with 100,000 Railway Sleepers.

For the execution of works on the East Lancashire Railway, viz., the Accrington Contract, being a distance of about 8 miles.

For the execution of that portion of the Newcastle and Berwick Railway, extending from Netherton to Tweedmouth, being a distance of about 53 miles. To be let in four contracts.

For the execution of works on the Leeds, Dewsbury, and Manchester Railway, viz., the Churwell Contract, being a distance of about 2½ miles.

For supplying the Wakefield, Pontefract, and Goole Railway Company with about 7,000 tons of Malleable Iron Rails, and 2,000 tons of chairs.

COMPETITIONS.

The Committee for the establishment of Public Parks, Walks, &c., at Manchester, offer two prizes, one of 50 guineas and the other of 25 guineas, for the best and second best set of Plans (with estimates), for the laying out, &c., of the sites already purchased by them.

The Board of Guardians of the Bridlington Union offer a premium of 10*l.* for a Plan and Specification of a Workhouse, the expense of which is not to exceed 2,000*l.*, and to accommodate 150 inmates.

APPROACHING SALES OF WOOD, &c.

BY TENDER.

In the Plantations of the Duke of Montrose, situate in the Parishes of Drymen and Buchanan, Stirlingshire: many Thousands of Larch Trees of some size, adapted for Railway Sleepers, Roofing and Joisting, and other purposes.

A Quantity of Old Wrought and Cast Iron, in store, at the Royal Arsenal at Woolwich.

TO CORRESPONDENTS

"G. W. B."—*The patent process referred to is Payne's.*

"B. B."—*The drawing is in the engraver's hands.*

"Window at St. James's."—*We have not room for all the letters sent us on this subject; they shall receive further consideration.*

"W. A."—*We will inquire.*

"A Learner" (Portsmouth).—*The term sesquialteral in geometry is a ratio, where one quantity or number contains half as much more than another: as 2 and 3, 6 and 9. If the width of a room be two-thirds its length, or the height of each division of a tower be half as much more than the width; it may be said that they are designed on sesquialteral proportions. It is thus Mr. Gwilt uses the term in the passage referred to.*

"F. H."—"*Specifications*" *by the late Alfred Bartholomew.*

"J. A. W."—*Can our correspondent refer us to a specimen of the stone in London, and give us the price.*

"B. J."—*The architect would be justified in charging 5 per cent. on the amount of the works as executed, and the value of the time occupied in preparing the drawings, &c., in accordance with the first instructions.*

"R. B. W."—*We were unable to avail ourselves of the sketch, which is left at the office with thanks. The account of the church shall appear.*

"G. B. C." (Drury-lane); "W. Mason;" "Thomas Smith;" "Dr. L.;" "G. R."—*Next week.*

"W. A."—*We understand the work on Linear Projection has not been published.*

Received.—"*Unhealthiness of Towns, causes and remedies,*" *by R. D. Grainger.*

ADVERTISEMENTS.

NOTICE TO INVENTORS.

OFFICE FOR PATENTS OF INVENTIONS and REGISTRATIONS of DESIGNS, 14, Lincoln's-inn-fields.—The printed INSTRUCTIONS gratis, and every information upon the subject of PROTECTION for INVENTIONS, either by Letters Patent or the Design Acts, may be had by applying personally, or by letter, prepaid, to Mr. ALEXANDER PRINCE, at the office, 14, Lincoln's-inn-fields.

PATENT OFFICE, 5, CHANCERY-LANE, NEAR FLEET-STREET.

INVENTORS requiring protection by LETTERS PATENT should apply direct to the PATENT OFFICE, as above, where Patents can be speedily procured for the United Kingdom, &c., and by which a great saving of expense will be effected. CAVEATS are entered at this office, fee 1*l.* 1s. DESIGNS of all kinds are REGISTERED. Apply at the PATENT OFFICE, 5, Chancery-lane, near Fleet-street.

PRIZES IMPORTANT TO INVENTORS AND PATENTEES.

A GOLD MEDAL, value 100*l.* and a SILVER MEDAL, value 30*l.*, will be given by Mr. M. JOSCELIN COOKE. The Gold medal for the best Patent, and the Silver medal for the best Design taken out or Registered at the OFFICE for PATENTS and DESIGNS, 20, Half-Moon-street, between the 1st of November, 1844, and the 1st of June, 1845. The Prizes will be awarded by competent judges on the 10th June, 1845. The conditions to be observed, together with instructions, charges, and every information for obtaining Patents in England or Foreign Countries, or Registering Designs, will be forwarded gratis, on application to Mr. M. JOSCELIN COOKE, at the Office for Patents and Registration of Designs, 20, Half-Moon-street, Piccadilly, London.

ROYAL ADELAIDE GALLERY, Lowther Arcade, Strand.—ATMOSPHERIC RAILWAY daily, with a Lecture, at Two and at Half-past Eight. A series of Lectures, with Illustrations, on the manners and customs of the Ancient Egyptians, by Mr. E. Clarkson, every Monday Evening. Mr. Russell's Lectures on Character, with Musical Illustrations, every Tuesday, Thursday, and Saturday Evenings. Les Reunions Magiques, on Wednesday and Friday. Lecture on Science, Daily, including Major Beniowski's Artificial Memory; Beale's Rotatory Steam-engine, &c. Every Evening a grand Promenade Concert, supported by first-rate talent, both instrumental and vocal. On Wednesday and Friday Evenings, a series of Lectures on "The Manners and Customs of New Zealand," by PAHE-A-RANGE, the New Zealand Chief.

A MAGNIFICENT, EXTENSIVE, and UNIQUE COLLECTION of TROPICAL FRUITS, modelled by Mons. Grimaud during his long Residence in the Isle of France, is just deposited at the ROYAL POLYTECHNIC INSTITUTION. The ATMOSPHERIC RAILWAY is lectured upon by Professor Bachhoffner, and exhibited Daily, and in the Evenings. A NEW AMERICAN INVENTION, COLEMAN'S PATENT LOCOMOTIVE ENGINE for ascending and descending inclined planes on Railways without the aid of stationary power. SWIMMING and DIVING ILLUSTRATED by the Son of Capt. Stevens, the celebrated teacher of Swimming, on Mondays, Wednesdays, and Fridays, at Two o'Clock, and on the Evenings of Tuesdays and Thursdays, at half-past Eight o'clock. The other Exhibitions, &c., as usual.—Admission, One Shilling; Schools, half-price.

HOLBORN AND FINSBURY SEWERS, MIDDLESEX.

THE COMMISSIONERS of SEWERS for the LIMITS give NOTICE, that their Office, Hatton Garden, is open daily between the hours of Ten and Four, where information can be obtained (gratis) by persons about to Purchase or Rent Houses or Property, or take Land for Building purposes, of the situation and level of the public Sewers, capable of affording sufficient Drainage, and which they recommend all such Persons to apply for at the above Office.

By the Court,
STABLE and LUSH, Clerks.

COURT OF SEWERS FOR WESTMINSTER, AND PART OF MIDDLESEX, No. 1, Greek-street, Soho-square.

TO BUILDERS and Others interested in buildings or in ground for building upon, within the district under the jurisdiction of this Court, drained by watercourses falling into the river Thames, between the city of London and the parish of Fulham.

The Commissioners hereby give notice, that by an Act of the 47th Geo. III. (chap. 7, local) it is required that, previously to the making of any new sewer in any street, lane, or public way, or in any part intended to become a street, lane, or public way, or to carry or drain off water from any house, building, yard, or ground, into any sewer under their management, or within their jurisdiction, a notice in writing shall be given to them, or to their clerk at their office, and that such new sewer or sewers shall be constructed and made in such manner and form as shall be directed by the said Commissioners, and not otherwise.

And, in order to prevent the serious evils and inconveniences that must arise from ground proposed to be built upon being excavated at too great a depth, the Commissioners have directed that, upon application being made at this office previously to the excavation of such ground, information shall be given as to the lowest depth at which the same can be drained.

And the Commissioners do also give notice that, whenever the lower floors or pavements of buildings shall have been laid so low as not to admit of their being drained with a proper current, they will not allow any sewers, or drains into sewers, to be made for the service of such buildings.

It is recommended to all persons about to purchase or take houses, or other premises, to ascertain whether such premises have separate and distinct drains into common sewers.

All petitions must be delivered at this office at least three clear days before they are presented to the Commissioners; and all such petitions will be called on in the order of their application, and the name of any party not present when called on to support the application will be struck out, and the proceedings must in consequence be commenced de novo.

All communications made with any sewer without leave of the Commissioners will be cut off, and the parties making the same will subject themselves to a fine.

The provisions of the Metropolitan Buildings Act (7 and 8 Victoria, c. 84) do not supersede the authority of the Commissioners of Sewers in the above respects, but their powers are expressly reserved, and their regulations made subservient to the purposes of that Act. The execution of such works, under the superintendence of the district surveyor alone, cannot therefore warrant the making of any sewers or drains within this commission, nor relieve the parties making them from the penalties above mentioned.

By order of the Court,
LEWIS C. HERTSLET, Clerk.

THE PROJECTED RAILWAYS.

ANALYSIS of the PATENT METALLIC SAND, or English Pozzolano, used in the foundations of the New Houses of Parliament, the great Tunnels on the Birmingham Railway, Sea-wall on the Great Western Railway in Devonshire, and other important works referred to more particularly in the prospectus.

Silica	49	Lime	6
Oxide of Iron	32	Magnesia	2
Alumina	6	Zinc	3

Arsenic and Carbonate of Copper 2

Price in Swansea, free on board, 6d. per bushel, or supplied in London at 1s. per bushel.

Used as an external Stucco the Metallic Sand Cement is unaffected by frost or wet; in appearance it resembles the best Portland Stone, requires neither colour nor paint, and is entirely free from vegetative cracks and blisters.—Further Particulars on application to Mr. C. K. DYER, 4, New Broad-street, London; and at the Metallic Sand Wharf, King's-road (opposite Pratt-street), Camden Town.

TO ENGINEERS, ARCHITECTS, AND CONTRACTORS.

GREAVES'S LIAS CEMENT and GROUND BLUE LIAS LIME, at 2, South Wharf, Paddington, London, and Works, Southam, Warwickshire.

Agent for Liverpool, Mr. WYLIE, 56, Gloster-street; ditto for Manchester, Mr. J. THOMPSON, Back King-street; ditto for Chester, Mr. J. HARRISON, Linen Hall-street.

ATKINSON'S CEMENT.—The public is respectfully informed, that the price of this very excellent Cement, which has now been in use for Architecture and Engineering works upwards of thirty years, is reduced to 2s. 3d. per bushel, and may be had in any quantity at Wyatt, Parker, and Co.'s Wharf, Holland-street, Surrey side of Blackfriars-bridge.

N.B.—This Cement being of a light colour, requires no artificial colouring or painting, and may be used for stucco with three parts its own quantity of sand.

MARTIN'S PATENT CEMENT.
TO ARCHITECTS, BUILDERS, AND PAINTERS IN FRESCO.

STEVENS and SON, PATENTEES and SOLE MANUFACTURERS, beg respectfully to announce that this beautiful Cement has now arrived at a degree of excellence far surpassing their most sanguine expectations. For all internal work it possesses a great superiority over every article hitherto in use; it is now being used extensively by Government in the British Museum and other public buildings. IT DOES NOT THROW OUT ANY SALT, but presents a beautifully plain and perfect surface, which may be painted upon dry work within four days without peeling. It is equally applicable for walls or lath, for mouldings, architraves, skirting, or flooring; and is admitted to form the best ground for fresco painting, having been used for many of the prize frescos lately exhibiting in Westminster Hall. It will bear an intense heat without cracking, and for hardness, durability, and economy, cannot be equalled.

186, DRURY-LANE, LONDON.

Agent for Liverpool and Manchester, Mr. R. Part, 11, Atherton's-buildings, Dale-street, Liverpool.

KEENE'S PATENT MARBLE CEMENT.—The Patentees of this composition beg to refer to the British Museum, the Royal Exchange, the new works at Bethlem Hospital, Greenwich Hospital, and the Coliseum in the Regent's-park, as buildings finished or in progress, in which Keene's Cement has been used as an internal stucco. Its superiority to common plastering consists in its extreme hardness, and the rapidity with which it dries, which qualities fit it to receive paint or other finishing sooner than other water Cement.

When employed for skirtings, architrave, and other mouldings, in place of wood, it checks dry-rot, is impervious to vermin, prevents the spread of fire, and is more economical in its application than the material for which it thus becomes the substitute.

Confirmation of these statements is to be found in the almost universal adoption of Keene's Cement for Skirting and Hall flooring in the new houses on the Hyde Park Estate, where its application is to be seen to the fullest advantage.

In Liverpool and Manchester, Keene's Cement has in several cases been used for the covering of the fire-proof warehouse floors, where its lightness and hardness give it the preference over tiles and flagging, which are much heavier, and necessarily leave the floor intersected with numerous joints, whilst Keene's Cement is laid down in one unbroken surface.

The high polish and marble-like hardness of which this Cement is susceptible render it the most suitable material or the manufacture of Scagliola.

Patentees, J. B. WHITE & SONS, Millbank-street, Westminster, Manufacturers of Roman and Portland Cement.

Depôt in Liverpool, 36, Seel-street; James Woods, Agent.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.

JOHNS and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask in any Climate for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.

Architects and Builders who have used this Cement have declared that it requires only to be known, to be universally preferred.

Specimens may be seen, and a Prospectus fully describing the Cement and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application to MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London: of whom also may be had,

JOHNS and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHNS and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producenable by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.